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Resident Physician

Ideal Location for the New Practice

A Comparison: Medical Practice in America and Great Britain

Clinico-Pathological Conference

How To Take Good Clinical Photos

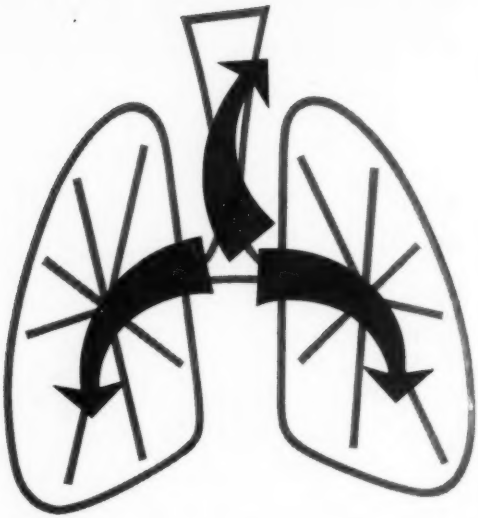
Peter Bent Brigham Hospital

Television Roundtable

November 1953 Vol. 4 No. 2

Journal for the Hospital Staff Officer

CHIEF OF SERVICE, RESIDENT AND INTERN



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November 1958, Vol. 4, No. 11

November 1958, Vol. 4, No. 11

Resident Physician

Contents

Articles

63 Ideal Location for the New Practice

69 A Comparison: Medical Practice in America and Great Britain

84 The Doctor Speaks German

91 Guest Editorial

94 Clinico-Pathological Conference

108 Peter Bent Brigham Hospital

122 E. Mead Johnson's Mission: Feeding Babies Better

134 Television Roundtable

172 How To Take Good Clinical Photos

192 Medical Texts and the Law

The Resident Physician is published monthly on the fifteenth by The Resident, Inc., with publication offices at 34 North Crystal Street, East Stroudsburg, Pennsylvania. Executive, advertising and editorial offices at 1447 Northern Boulevard, Manhasset, New York. Accepted as controlled circulation publication at East Stroudsburg, Pennsylvania. If undelivered, please send form 3579 to Resident Physician, 1447 Northern Boulevard, Manhasset, New York.

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Contents

Resident Physician

Departments

15 Therapeutic Reference

21 Viewbox Diagnosis
What does the film tell you?

25 Resident Relaxer
A diversion with a purpose—see how you do.

30 Letters to the Editor
Questions and comment by readers.

59 Editor's Page

214 Mediquiz
Working alone or with your colleagues, you'll do well to get nine out of ten correct.

220 What's the Doctor's Name?

222 Books About Doctors

224 Leads and Needs
Practice openings; residency opportunities.

230 Advertisers' Index
Companies whose products and services are advertised in this issue of your journal.

In Anticoagulant Therapy

Why HEPARIN?

Heparin is the body's own anticoagulant. It is a substance which is essential in maintaining the fluidity of circulating blood and is found in all mammalian tissues. Heparin is produced in the body by mast cells which occur in perivascular connective tissue everywhere. It is found in greatest abundance in the liver and lungs. The therapeutic usage of heparin is based upon its property to inhibit the coagulation of the blood. Its timely administration will prevent thrombosis, and, even if administered after thrombosis has set in, it will prevent further propagation of the clot. In all conditions in which thrombosis or the extension of an already existing thrombus is to be avoided, the use of heparin is advisable.

When injected, heparin's *natural* action in the body is to prevent the conversion of prothrombin to thrombin (anti-thrombin action). By neutralizing thromboplastin, it also acts as an anti-prothrombin. Further, it inhibits the agglutination and deposition of platelets, thereby discouraging thrombus formation. Heparin acts directly on blood clotting constituents and does not destroy any component of blood or permanently change the normal constituents of blood. For emergency use it is the *only* anticoagulant which acts almost immediately (within a few minutes on intravenous injection). For safety's sake, its action can be terminated rapidly when necessary. Because of its rapid action, most authorities agree that initial control of thrombo-embolic diseases should be effected by means of heparin administration.

Significant differences exist between heparin and oral anticoagulants:

	HEPARIN	ORAL ANTI-COAGULANTS
Latent Period	Immediate Effect I.V.	24-48 Hours
Effect on Prothrombin Level of Blood	Slight	Markedly Lowered
Effect on Coagulation Time of Blood	Markedly Prolonged	Slightly Prolonged
Regulation of Anti-coagulant Action	Easy	Difficult
Suspension of Action	Rapid	Delayed
Duration of Anti-coagulant Action	12-24 Hours	Several Days
Mode of Administration	Parenteral Only	Oral

Combined heparin-oral anticoagulant therapy overcomes one of the disadvantages of oral therapy by making available the immediate action of heparin on coagulation time during the induction period of the oral drug.

Thus the use of oral anticoagulants in hospitals complements but does not replace the use of heparin. To date, no other substance has proven as effective as heparin in the prevention and treatment of thrombosis and embolism.

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Purified heparin was first made available to physicians and hospitals in the United States in 1939 as Liquaemin Sodium 'Organon'. Organon's experience in the manufacture of heparin thus antedates that of all other companies. Because and through this long experience in heparin manufacture, not only is Liquaemin Sodium biologically standardized, but before its release is subjected to sixteen extra safety tests, several more than are required by the U.S.P., to assure maximal effectiveness and safety of the preparation. Liquaemin Sodium offers only the purest grade of heparin, and solutions of Liquaemin are water-white in appearance. Thus, just as heparin has remained the only satisfactory compound of its group, Liquaemin has remained the standard heparin preparation since its introduction.

Liquaemin Sodium can be obtained in a variety of dosage forms and strengths, from the original low concentration of 1,000 U.S.P. Units (approx. 10 mg.) per cc for continuous intravenous drip, to the 20,000 U.S.P. Units (approx. 200 mg.) per cc in gelatin, to the 20,000 U.S.P. Units (approx. 200 mg.) per cc aqueous solution for convenient intramuscular depot anticoagulant effect. With its 20,000 U.S.P. Unit per cc aqueous solution of Liquaemin, Organon pioneered the now widely accepted concept that prolonged heparin effect can be achieved by injecting intramuscularly an *aqueous* solution of high concentration-low volume heparin.

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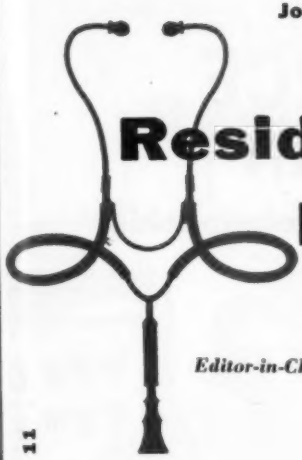
Journal for the Hospital Staff Officer



Resident Physician

November 1958, Vol. 4, No. 11

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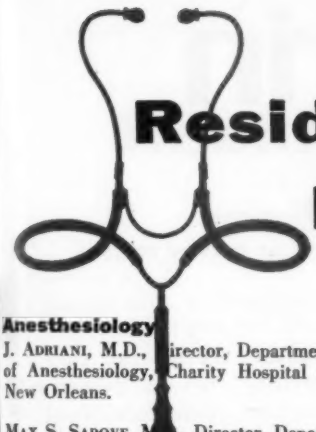

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1. Cass, L.J., et al.: J.A.M.A. 166:1829 (April 12) 1958. 2. Batterman, R.C., et al.: Am. J.M. Sc. 234:413 (Oct.) 1957. 3. Medical Department, Wyeth: Final Report on the Clinical Evaluation of Zactirin.

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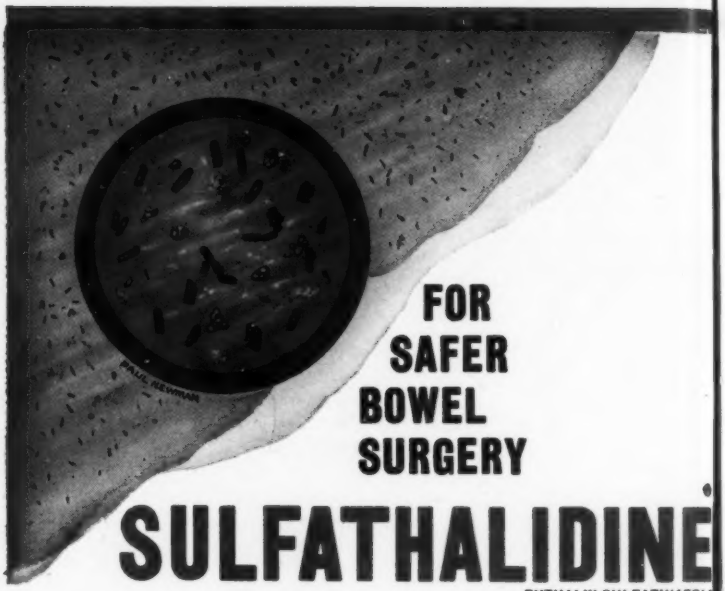

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Allergic Disorders and Asthma

Meticorten 55
Pyribenzamine Lontabs 195
Tedral ..... Cover 2

Analgesics, Narcotics, Sedatives and Anesthetics

Butisol Sodium 37
Doriden 3
Leritine 216
Placidyl 221
Zactirin 12

Antacids and Intestinal Adsorbents

Gelusil 225

Antibiotics and Chemotherapeutic Agents

Achromycin V 150, 151
Cathomycin 26
Chloromycetin 31
Compocillin-VK 40, 41
Cyclamycin 114, 115
Gantrisin 58
Ilotycin 215
Panalba 170, 171
Pen•Vee K 207
Pen•Vee L-A 207
Sulfathalidine 14

Antiemetics

Compazine 57

Arthritic Disorders and Gout

Bufferin 183
Kenacort 203

Cardiovascular Disorders

Butiserpine 141
Gitaligin 179
Lanoxin 191
Rauwiloid 189
Serpasil 56

Careers

U. S. Air Force* 10
U. S. Army* 159
V. A. Career Residency* 222

Contraceptives

Delfen 155
Ramses 34, 201

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Cough Control
Romilar CF 137, 139
Tessalon 218, 219

Diagnostic Agents
Acetest ..... Cover 3

Diarrheal Disorders
Cremomycin 157
Furoxone Liquid 46, 47

Diuretics
Diamox 20

Dressings
Curity Dressings 197
Furacin 133
Owens Dressings 173

Equipment and Supplies
Alternating Pressure Pad* 53
Baumanometer 187
B. D. Products 161
Bracer Supporter Belt 16
Electrocardiograph 153
G. E. Patrician 211
Office Equipment* 149
Printing Needs* 223
Stationery & Record Supplies* 229
Surgaire 175
Topasil 175
Tubex 35
Universal Table 169
Visette ECG 181

Foods and Beverages
Sustagen ..... Cover 4

G.U. Preparations and Antiseptics
Mandelamine 147
Pyridium 143
Pyridium Tri-Sulfa 145
Urised 220

Hematinics
Mol-Iron 22, 23

Hemorrhoids and Rectal Disorders
Anusol-HC 29

Hemostasis
Heparin 8
Liquaemin 8
Mephyton 44
Premarin Intravenous 185

Infant Formulas and Milks
Carnalac 28
Instant Milk 193
Similac 209

Investments and Insurance
Casualty & Health Insurance 229
Health Insurance Plans 27
Life Insurance 45

Laxatives and Anticonstipation Preparations
Agoral 217

Menopause & Premenstrual Tensions
Premarin 4, 6

Muscle Relaxants
Parafon, Parafon with Prednisolone 49, 50, 51

Pre- & Post-Operative Care
Alevaire 52
Thorazine 18, 19
Urecholine 213
Vi-Drape Surgical Film 39

Skin Disorders and Antibacterials
Kwell 43

Steroids and Hormones
Decadron 163, 164, 165, 166

Tranquilizers
Equanil 199
Meprospan 24

Ulcer Management
Pathibamate 32, 33

Vitamins and Nutrients
Beminal Forte with Vitamin C 36
Livitamin ..... between pages 34, 35
Nilevar 135
Vi-Cert C 1000 205

Weight Control
Dexamyl 177

In a study[1] on pediatric surgery, 'Thorazine' was

'Thorazine'
chlorpromazine, S.K.F.

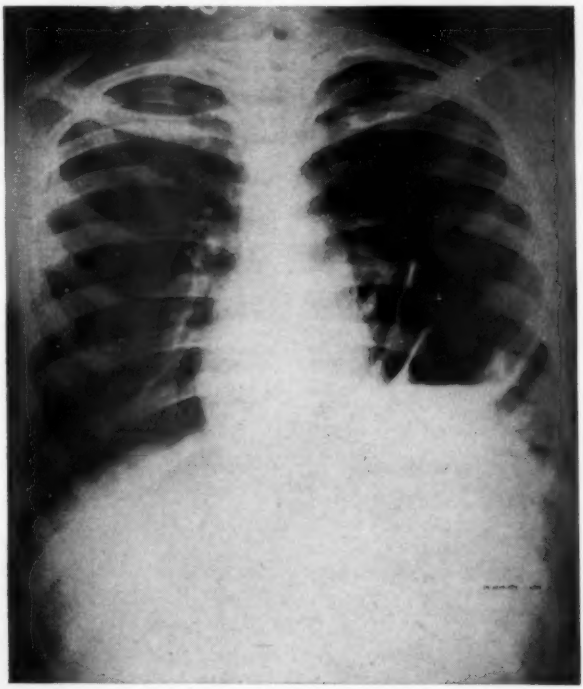
Viewbox Diagnosis

Edited by Maxwell H. Poppel, M.D., F.A.C.R.,
Professor of Radiology, New York University College of Medicine
and Director of Radiology, Bellevue Hospital Center

What Is Your Diagnosis?

1. Cysts in the lung
2. Emphysematous blebs
3. Multiple abscesses
4. Herniation of the hollow abdominal viscus

Answer on page 229



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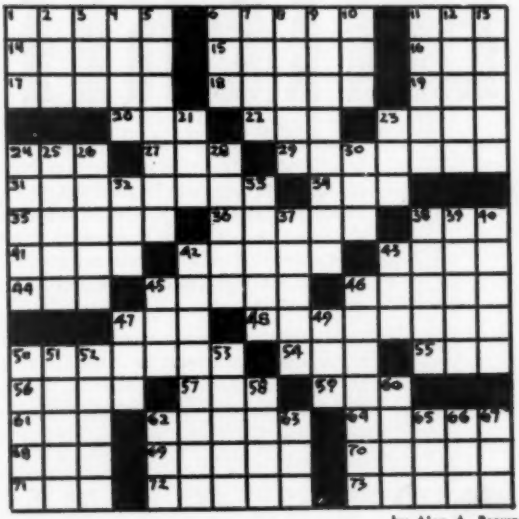
(Answer on Page 225)



by Alan A. Brown

ACROSS

1. Pertaining to the kidney
6. Bundle of nerve fibers with same origin and function
11. ... Magnon race of men
14. Within (pref.)
15. Any fluid or semifluid of the body
16. Popliteal region
17. Pulsation (pl.)
18. Adversary
19. Binary compound of a nonmetallic element (suff.)
20. A female
22. Terbium, argon (chem. symbols)
23. Square-rigged vessel
24. Gradual decline
27. Pour in (L., abbr.)
29. A failure of nutrition
31. Organ of voice (pl.)
34. Greasy liquid
35. Carry
36. The trunk without head or extremities
38. Passing fancy
41. Ointment (abbr.)
42. Intrinsic worth
43. Constellation
44. Very small
45. Men
46. Pointed weapon
47. Vehicle
48. Stricture of a duct or canal
50. Used in treatment of diabetes
54. Perceive
55. Nitric acid
56. Contend with
57. Make an incision
59. The lower extremity
61. Three (pref.)
62. Variety of coffee
64. Pancreatic extract
68. Put into practice
69. Pale
70. Gnawed
71. Stool (L., abbr.)
72. College head (pl.)
73. Tendon of a muscle

DOWN

1. Bone extending from vertebra to sternum
2. Unsaturated hydrocarbon (chem. suffix)
3. National Tuberculosis Association (abbr.)
4. Skills
5. Beating
6. Article
7. Dwarf
8. One-celled protozoa
9. Affected with complete loss of consciousness
10. Attempt
11. Bird sound
12. Lines radiating from a center
13. Greek letter
21. England (abbr.)
23. Pill (L., abbr.)
24. The bend of the arm
25. Unit of measure in physics
26. Water saturated with salt
28. Pertaining to unborn offspring
30. River (Span.)
32. Yttrium, niton (chem. symbols)
33. Bottom of the foot (pl.)
37. Forms reddish deposit on metal
38. Unspoiled
39. Once more
40. Pertaining to the back (pref.)
42. Unnaturally swollen: said of a vein
43. Derivation (pref.)
46. Spasmodically expels air through nose
47. Signal
49. Snake-like fish
50. A stroke
51. Pertaining to Scandinavia
52. Discovered
53. Nape of the neck
58. At that time
60. Convolutions of the cerebral cortex
62. Insane
63. Answer (abbr.)
65. One (comb. form)
66. Quality (suff.)
67. Modern

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Letters to the Editor

Unsigned letters will neither be published nor read. However, at your request, your name will be withheld.

Cleveland Credit

More than somewhat belatedly, I am, as earlier intended, writing to offer our commendation for the fine feature article in your January issue on the Cleveland Clinic Foundation and the Frank E. Bunts Educational Institute. As friends and admirers of the Cleveland group, we found the presentation not only very interesting reading, but a realistic appraisal of medical practice, research, and of course, particularly graduate medical education in a private group—nonprofit foundation—nonuniversity-connected hospital, etc. It was, needless to say, of particular interest to us, for as I'm sure you know, the makeup of our organization is comparable—Ochsner Clinic, Ochsner Foundation Hospital and Alton Ochsner Medical Foundation. In the absence of a byline to identify the author of the piece, I am writing to you for I feel congratulations are very much in order. The interesting "Guest Editorial" by Dr. Leedham served, I thought, to complete a most effective presentation. Our best wishes for the continued success of your fine publication.

E. Allen Davis
Director of Public Relations
Alton Ochsner Medical Foundation
New Orleans, Louisiana

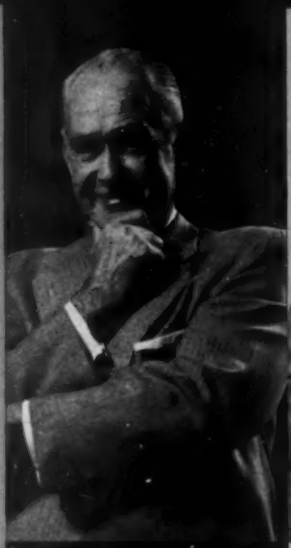
• *Credit for the Cleveland Clinic article is due to the efforts of Dr. Leedham and his staff at the Institute.*

Cartoon

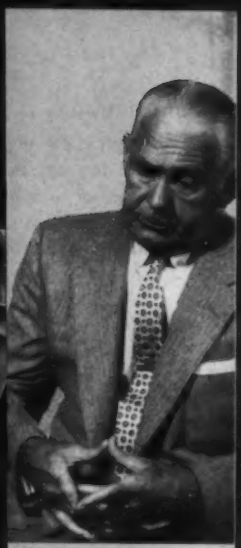
On page 137 of your April 1958 edition (Vol. IV, No. 4) is a cartoon by Horowitz regarding laboratory work. This cartoon so exactly typifies the attitude of the present intern and resident group that I should like your permission to photo-

—Continued on page 38

in anxiety and tension your patient can meet the rigors of life



He's... active alert



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As shown recently[1] in a prolonged comparative study of routine nxiety patients, Butisol "was found to be the most effective sedative which will produce satisfactory daytime sedation...with minimal occurence of untoward reactions. Large nighttime hypnotic doses are unecessary in the majority of patients."[2]

1. Batterman, R. C.; Grossman, A. J.; Mouratoff, G. J., and Leifer, P.: A Clinical Re-evaluation of Daytime Sedatives, Scientific Exhibit, Annual Meeting of AMA, San Francisco, June 23-27, 1958.
2. Grossman, A. J.; Batterman, R. C., and Leifer, P.: Fed. Proc. *17*:373 (March) 1958.

BUTISOL sodium® TABLETS • REPEAT-ACTION TABLETS • ELIXIR • CAPSULES

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McNEIL

—Continued from page 30

graph it for my own use in lectures and demonstrations. Full credit will be given to you in any such talk or demonstration. I feel that a great deal of the antipathy which our present intern and resident group feels towards laboratory work, and I feel that a great deal of the shortage presently found in pathologists is due to an unfortunate introduction to the field which these individuals have acquired during their medical school training.

Joseph D. Mann, M.D.
Director of Laboratories

Butterworth Hospital
Grand Rapids, Michigan

• *Cartoon reproduced below. We are glad to give this permission.*

"All the lab work's done; can I come back up to the ward now?"

Delivery

Many thanks for your continuous delivery of RESIDENT PHYSICIAN containing so many valuable, educational articles. I have moved from Akron to Columbus. May I hope for further service at my new address. Many thanks for your attention and consideration.

I. O. Meyer, M.D.

Ohio State University Hospital
Columbus, Ohio

Language Guide

Could you please send me a copy of your publication, "The Doctor Speaks." Either send it C.O.D. or bill me along with it. We have to speak to people of many languages and I saw it in the language division of the Mayo Clinic and thought it was an extremely helpful publication. You are to be complimented for producing it.

O. E. Laxdal, M.D.

Medical Arts Clinic
Regina, Saskatchewan

• *For other readers who may be interested, single copies of the 6-language guide for examination and history-taking of non-English speaking patients are available from* RESIDENT PHYSICIAN *at $1.00.*

Income Tax

I have read with great interest the article "What about Your Income Tax" in the February issue. As a foreign physician under the Exchange-Visitor Program, however, it has been my experience that the tax

—Continued on page 42

No. 2 in a descriptive series on Abbott specialties

For the first time an oral solution of potassium penicillin V is offered to American physicians.

It gives the unusually high, fast blood levels typical of the potassium salt of penicillin V. At the same time it offers the added appeal of a good-tasting, good-looking oral solution.

The product is supplied as Compocillin-VK Granules. These granules are dry, and easily reconstituted with water. They make a clear, red solution with a fresh, cherry flavor—taste-tested and well accepted by patients of all ages.

Compocillin-VK works well orally, because it is relatively stable in acid. Unlike penicillin G, penicillin V passes through the gastric juices without being destroyed. The potassium salt of penicillin V is particularly well absorbed from the upper gastrointestinal tract. Thus Compocillin-VK Oral Solution gives high, peak blood levels within 30 minutes after dosage.

These levels are substantially higher than with other salts of penicillin V, or with penicillin V acid. Indeed, Compocillin-VK Oral Solution gives blood levels as high as (or higher than) ordinary doses of *injected* penicillin.

Each 5-cc. teaspoonful of the reconstituted solution represents 125 mg. (200,000 units) of potassium penicillin V. The usual adult dose is 2 teaspoons 2 or 4 times daily; children 1 teaspoon 3 or 4 times daily. 40 and 80-cc. bottles, List No. 6355.

Compocillin®-VK
(Potassium Penicillin V)
Granules for Oral Solution

Abbott

611175

—Continued from page 38

deductions of foreign house officers vary considerably in different hospitals and have often been the subject of confusion. Thus, tax deducted has varied in my own experience from 14 to a straight 30% in stipends far below $5000 a year. Furthermore, some places deducted Social Security while others did not. In view of the large number of foreign house officers working in this country I wonder if you could possibly publish a similar article on the federal income tax of foreign house officers, answering particularly the following questions:

a) what is the federal income tax for foreign house officers?

b) what exemptions and deductions are they entitled to claim?

c) do they have to pay Social Security?

As to the last point, an Exchange-Visitor by participating in this program has expressed his intention not to become a permanent resident of the U.S.A. and therefore, in this status never will be entitled to the benefits of Social Security. It seems in this light that Social Security should not be paid by foreign house officers.

I am certain that all foreign house officers will be very grateful for your consideration of this subject.

Alfred Zettner, M.D.
Bowman Grey School of Medicine
Winston-Salem, North Carolina

• *We have referred your letter to the Internal Revenue Service, U.S. Treasury Department and received the following reply:*

. . . In regard to the taxability of aliens employed in United States hospitals as interns and resident physicians, you inquire particularly concerning the liability to tax of the nonresident alien participants of the Exchange-Visitor Program under State Department sponsorship.

The information submitted indicates that the alien doctors who, as participants in the Exchange-Program, enter the United States for the completion of their training in United States hospitals prior to establishing their own practice, are liable to the federal income tax. They serve as interns or resident physicians in approved hospitals. Apparently, each individual enters into a separate contract with the hospital and receives substantially the same amount as a citizen of the United States performing similar services.

It is the position of this office that services, such as those performed by interns and resident physicians, are of material benefit to the hospital for which rendered. The compensation for such services constitutes taxable income in the hands of citizens of the United States and is similarly taxable in the hands of the alien doctors. Such aliens, who, as an actual fact, are nonresident aliens are regarded as engaged in trade or

—Continued on page 46

uroxone® Liquid

...without creating new problems

A PLEASANT ORANGE-MINT FLAVORED SUSPENSION

EATON LABORATORIES, NORWICH, NEW YORK

—Continued from page 42

business within the United States by reason of personal services rendered in this country and are subject to the withholding of tax at the source under Section 1441 of the Internal Revenue Code.

After the close of the taxable year but not later than June 15, he is required to make a full and complete return, Form 1040B, of income from all sources within the United States. He may claim deductions attributable to his income from United States sources and if a nonresident of a contiguous country is entitled to one exemption of $600 for self. Those doctors, who are residents of Canada or Mexico are entitled to the same exemptions as citizens of the United States.

There is no provision in any of the income tax treaties to which the United States is a party whereby the compensation of interns and resident physicians who are completing their training in a U. S. hospital, is exempted from U. S. tax.

Article 10 of the United States-France income tax treaty provides a special rule of taxation with respect to the professional fees constituting income derived from United States sources by a nonresident alien, resident of France. Under this rule, such nonresident alien rendering professional services, such as medical, legal, engineering, and scientific services, is not subject to United States tax with respect to such compensation unless he has an office or other fixed place situated in the U. S. during the taxable year.

Since the resident physicians in question are merely in the United States for the purpose of completing their training, prior to establishing their own practice, it does not appear that they qualify for the benefits of Article 10 of the treaty.

The status of an employee as a resident or a nonresident alien is immaterial in determining whether the services performed by him constitute "employment" for Federal Insurance Contributions Tax purposes. However, the remuneration paid to a doctor for services performed as an intern are specifically excepted from "employment" by Section 3121 (b) (14) of the Code. The remuneration paid to the resident physicians is subject to FICA tax except in certain cases, such as where the employer hospital is exempt from tax under Section 501 (c) (3) of the Code, or is a wholly owned instrumentality of a State or political subdivision thereof. In such cases the physician should consult the hospital as to the status for FICA tax purposes of its employees, or he may submit a request, accompanied by a statement of complete facts, to this office for advice as to his particular case.

Donald R. Maysey
Director of International Operations
U. S. Treasury Department
Internal Revenue Service
Washington 25, D.C.

—Concluded on page 54

NECROSIS and SECONDARY INFECTION of decubitus ulcers ARE CONSTANT THREATS[1-5]

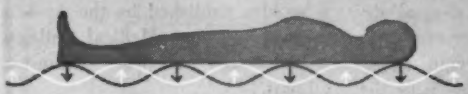
The Alternating Pressure Pad

"...a very effective measure"[4]

Eliminates decubitus dangers and discomfort

When debilitated bed- and chair-ridden patients cannot easily shift their weight, the resultant ischemia frequently produces decubitus ulcers.[1,3,5] These gangrenous lesions are painful, persistent, and prone to secondary infection.[2]

A simple, effective, and time-saving way of promoting local circulation in such patients is the use of the Alternating Pressure Pad. The APP unit is a special air mattress



with two series of air cells, alternately inflated and deflated every three minutes by automatic mechanical means, thereby constantly shifting the pressure points against the patient's skin. Local circulation is encouraged without the trouble and discomfort of turning the patient frequently.[1,4,6] The APP unit is guaranteed to be safe, simple, foolproof.

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CHRONIC ARTHROPATHIES
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CONGESTIVE HEART FAILURE
HEMIPLEGIA
HYPOPROTEINEMIA
MUSCULAR DYSTROPHY
NEPHROSIS
PARAPLEGIA
POLIOMYELITIC PARALYSIS
TUBERCULOSIS
TRACTION
WASTING DISORDERS

"The alternating pressure pad is useful... in the prevention as well as the treatment of decubitus ulcers."

References cited: (1) Gardner, W. J.: J.A.M.A. 154:534, 1954. (2) Anderson, W. A. D.: Pathology, p. 89, St. Louis, C. V. Mosby Co., 1953. (3) Sutton, R. L.: Diseases of the skin, p. 764, St. Louis, C. V. Mosby Co., 1956. (4) Dilcoct, J. W.: 386, *in* Conn, H. F., (ed.): Current Therapy, W. B. Saunders Co., Phila., 1957. (5) Davidoff, L. M.: 497, *ibid.* (6) Gardner, W. J. et al.: Arch. Phys. Med. Rehab. 578:580, Sept., 1954.

Thousands of APP units now in private and government hospitals

Units available for standard beds, respirators, wheel chairs. We will be pleased to demonstrate the APP unit in your office or hospital. No obligation, of course. The APP unit is available for use in hospitals and private homes on a rental basis.

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I would like further information on the Alternating Pressure Pad unit.

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(name — please print)

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(street)

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(city, zone) (state)

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(telephone number)

—Concluded from page 48

Academic Opportunity

In the August issue of RESIDENT PHYSICIAN I read the Guest Editorial "Opportunities in Academic Medicine." Because I am very much interested in an opportunity in medical research I would like to know if you could tell me where I could get some more information concerning such opportunities.

Hans S. Menco, M.D.
State Veterans Hospital
Rocky Hill, Conn.

In the Guest Editorial of the August 1958 issue of RESIDENT PHYSICIAN, Dr. Vernon W. Lippard pointed out the "many opportunities open to the young physician who plans to enter the faculty of a clinical department." I am interested in knowing whether a foreign physician, in the United States with the Exchange Visitor Program type of visa, could be qualified to secure a postdoctoral fellowship as preliminary to an academic position. I would be very grateful to learn whether inquiry can be made of a central organization or whether it is necessary to get in touch with the single medical schools.

Gaetano Azzolina, M.D.
Baylor University Hospital
Dallas, Texas

• *We sent both letters to Dr. Lippard. The following is his reply:*

Your inquiries to the editor of RESIDENT PHSYCIAN have been referred to me for reply. Many postdoctoral fellowships, particularly those administered by privately endowed foundations and medical schools, are available to graduates of foreign medical schools and noncitizens. Most of them are listed in a booklet published by the Association of American Medical Colleges, 2530 Ridge Avenue, Evanston, Illinois.

Vernon W. Lippard, M.D.
Dean, School of Medicine
Yale University
New Haven, Conn.

Perrin H. Long, M.D.

Editor's Page

"The Doctors Draft"

At this writing, it appears that the Berry Plan has failed for the first time to obtain the required number of physicians needed by the Armed Forces for the fiscal year 1959-60.

Currently, there is a deficit of several hundred applicants for the Berry Plan. Anticipating that this deficit will not be made up by July, 1959, Selective Service is preparing a special call for doctors. A recent Selective Service Bulletin (#196) states, in effect:

Too few physicians are volunteering for the active duty and residency programs to meet the current requirements of the Berry Plan.

If this trend continues, Selective Service will have to draft physicians on a special call.

Therefore, local boards in anticipation of a special call for physicians, will proceed with the physical examination of all physicians in class 1-A, or in class 1-A-D and who have not been examined, or who are in class IV-F under provision of Section 1622,44 (a) of the regulation.

It also appears certain that Selective Service will

recommend to the next Congress that the current Selective Service Act, with its amendment relating to "special registrants" (doctors and dentists), be re-enacted by simply changing the date for termination from June 30, 1959 to June 30, 1963. There is little doubt that Congress would take early action on such a request, and that the Selective Service Act with its provision for "special registrants" will continue for several more years.

Failure to fill the quota of physicians for active duty and residency training deferment under the Berry Plan this year seems to have resulted from a belief on the part of many interns that (1) the Selective Service Act would not be re-enacted, and (2) that even if it was, why not take a chance one way or the other of being drafted. What interns and residents probably did not understand about the current law *is that even if Congress should not re-enact the Selective Service law, all male interns and residents who had been deferred for their premedical or medical education would be liable for military service until age thirty-five, unless they were found to be physically unfit.* This would hold not only for graduates, but also for all deferred, male students currently obtaining their education.

Under the so-called "regular draft," a slight modification of the current Executive Order which prohibits inducting married registrants who have children, or registrants who are over twenty-six years of age, would make all physicians and dentists who have been deferred for educational purposes, who are under thirty-five, and who have not had military service, eligible for two years of service with the uniformed forces.

If a resident is selected under the draft, will he be

deferred for the balance of the training year, or will he be inducted immediately? In Dr. Berry's letter dated, October 1, 1958, which was sent to all unsuccessful applicants for deferment for residency training, one finds the following: "as stated in the information bulletin, physicians who apply for reserve commissions upon the receipt of induction orders from selective service must be prepared to enter military service at time of call, even though in residency training." In other words if you are called for induction, you will go. There will be no deferment to complete your year of residency. That is the only fair way to do it, otherwise, someone else would have to be inducted. *This should be borne in mind by chiefs of service and hospital administrators.*

The times in which we are living are dangerous and uncertain. The question of whether our country will be engaged in fighting a "brush fire," a "hot war," or whether we will be faced indefinitely with a "cold war," is of course, unanswerable. It would appear however, that we are living in a period when for the best of our country, our profession, and for what we believe to be a desirable way of life, personal wishes and preferences will have to give way to what is considered by our leaders as necessary for the group as a whole. This is not the time to "figure the angles," as such a course may bring disrepute on ourselves and our profession. We as individuals and as members of a profession are under an increasingly critical survey by groups which would like nothing better than to bring our profession under restrictive and bureaucratic control. Anything we do which creates public suspicion of our aims, ideals, or mores provides ammunition for these critics. One of the most serious

of criticisms which might be made against us as individuals or as a profession is that we now lack patriotism. This must be avoided.

In conclusion, the question may be asked of all young doctors who are eligible for military service as to whether it would not be better to enter the service in an orderly, planned manner, with the date of entry predetermined, rather than to run the risk of receiving the famous "Greetings" and be inducted at a time inconvenient to himself, his family, his hospital, and (of importance in the future) to his patients in private practice.

Perrin H. Long.

NF'S NEW SCHOLARSHIPS

To make it financially possible for more qualified American college students to enter the health professions, the National Foundation (formerly the National Foundation for Infantile Paralysis) has launched a 10-year, $12 million "Careers That Count" scholarship program in medicine, nursing, medical social work, physical therapy, and occupational therapy. In medicine, 100 scholarships at $500 each will be awarded each year to candidates in pre-med or first year medical school. Individual scholarships will be automatically renewed each year for four years assuming a satisfactory grade level is maintained. Scholarship funds will be unrestricted and may be applied by the student to any expenses attendant to his education. Allocation of the 100 scholarships will be determined by state population and selections will be made by state committees.

There are a hundred individual decisions the physician must make in the process of finding that . . .

Ideal Location for the New Practice

G. T. Behringer, M.D.

The complex of decisions confronting the newly practicing physician who seeks a location is a good index to the importance of the problem.

Any of the possible mistakes he may make could be disastrous.

Just for a sample: he may make his wife, children, parents or in-laws unhappy by his choice, he may dislike the climate, people and regional mores of his location, he may miss the cultural, educational and recreational advantages he'd been used to, he may find competition too tough or his specialty in too little demand,

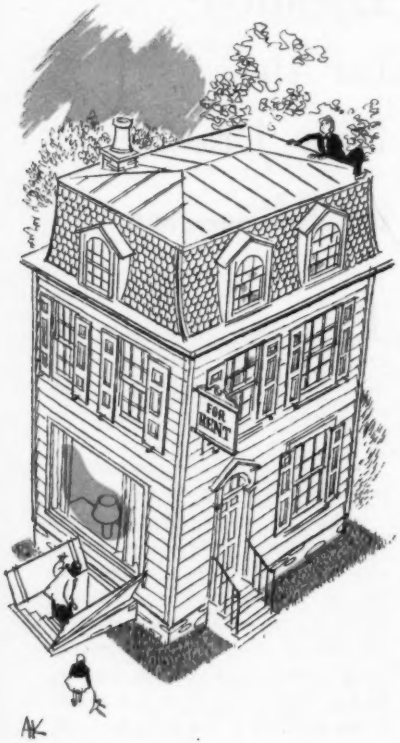
he may find hospital facilities and professional consultants inadequate.

In other words, the list of possible frustrations is practically endless.

Determinants

But let's examine the major ones and see if we can, by bringing them to the new physician's attention, better prepare him to handle them.

The determinants of location are basically two, personal and professional.



Heading the personal list is a choice among big city, suburb or small town as a location for practice.

If the physician has lived in a big city all his life, there is a likelihood he will want to go to the suburbs, a strong trend in recent years. The prospect of neat, clean streets, one-family houses, shade trees and the corner ice-cream parlor, all with the city within easy reach, seems ideal.

There is a second possibility that he has seen military service in a small town in the hinterlands and wants this life instead. He feels that in the isolation of the farmlands he can relax for the first time in his life and get to know people on intimate terms.

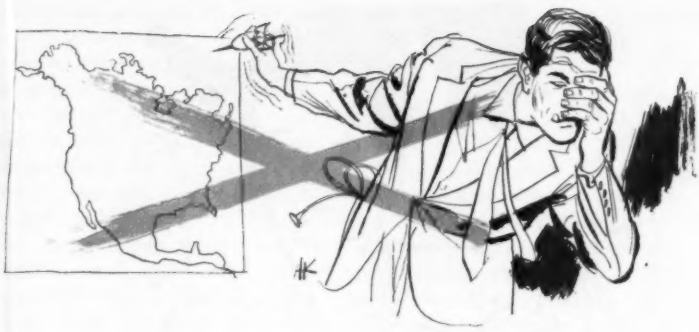
Or, finally, he may see the big city as offering him a good way of life.

Drawbacks

What are the shortcomings of each of these locations? Suburban living, to begin with, is sometimes a shock to the big-city dweller. The pace of the big city, the constant nearness of people, the easy convenience of the all-night restaurant and drugstore, the sense of being in the midst of great activity are suddenly gone.

The doctor's wife, in particular, is apt to notice the change. Empty streets and comparative isolation have unnerved many a housewife not prepared for them.

A. C. Spectorsky, author of *The*



Exurbanites, writes, "Mrs. Jones, too, has her constellation of problems. She is isolated all day. She has no share in most of her spouse's waking life . . . She is edgy, tired, irritable by the end of the day."

And having the cultural and recreational advantages of a big city nearby may not turn out to be the same as living amongst them. That two or three hours of round-trip travel may turn out to be a greater bogey than expected.

In the "significant minority" of Mr. Spectorsky's exurbanites who soon become ex-exurbanites, a yen for the past develops. Mr. S. describes the first doubts thus. "Isn't this what they wanted when they moved from a city apartment? (Can they admit to each other the secret nostalgia each guiltily feels while fondling memories of that life?)"

Leader

Finally, the suburb, if it is new, is underdeveloped. Floods and snow problems are commonplace. Insects can be a nuisance, including everything from mosquito swarms to caterpillar invasions. The doctor, of course, can expect to be tapped as a leader of various projects for new schools, new parks, new sidewalks and sewers. His time will not be his own.

The small town in a farm area provides its own headaches. Farm folk may be very provincial and slow to accept the stranger. The doctor may also run up against patients with an independent contrariness when it comes to following instructions and a lack of scientific knowledge.

The doctor who plans for big city living for the first time because he has lived nearby one all his life and yearns to be part of it may find more than he bargained for in noise, crowds, dirt, impersonality, competitiveness and high prices.

The doctor may seek a special geographical region as prime to his

interests. The stumbling blocks to be watched here are the regional mores and prejudices.

Each area has its own pace, its own flavor, its own folk traditions. Religious and ethnic organizations should be contacted for advice.

Interests

The doctor may base choice of location on the health needs of a member of his family. In this case, pollen-free Florida, hot, dry Arizona may make the difference.

If the area has outstanding educational institutions, or free state or city colleges, the doctor's concern for his children may prevail.

If the doctor has vacationed in Florida or California, the memory of a year-round mild climate may be a factor.

If fishing or hunting are his passion, the states that abound in trout streams, lakes and forests will prevail.

In-laws

The doctor will want to consider not only the wishes and needs of his wife and children but also of his parents and in-laws. If he and his wife are closely attached to their parents, they will not want to move too far from them. If, on the contrary, an overprotective mother or antagonistic mother-in-law is in the picture, the heart may grow fonder for that more distant location.

Having determined his personal needs, the doctor must watch for his professional interests. The first question is whether he can get a license to practice in the state of his choice. State qualifications must be carefully examined and fulfilled. He must then be certain of an appointment to the hospital in his area.

One young surgeon who had all but solved his problem of location suddenly found that his hospital had a grading system for its surgeons. Top men, those with most seniority, could do any kind of surgery for which they were board qualified. He, with all his previous training and credentials, would have to start at the bottom of the ladder, permitted to do only a.p.'s, hemorrhoidectomies and suchlike until, literally, someone above him died. He did not make application.

Economics

Another important consideration: what is the competition in the area? Do they need a GP, surgeon or pediatrician—or don't they? Generally, specialists do better in the cities and large towns, GP's in the smaller towns and rural areas.

At last the doctor considers immediate locale. It must, of course, be near a hospital, and there must be adequate public transportation facilities both to the hospital and to his office. The neighborhood, and the town, should look and feel like a community of substantial merit or on the way to being one. An untidy, clap-board town that is the picture of economic distress is one to avoid.

There should be adequate sewage facilities, gas mains and electric and phone lines near the office. It should be clearly visible to the neighborhood and not be near industrial noise, soot or ill-smelling streams. There should be parking facilities nearby, preferably off-street.

Zoning

The doctor will have to make up his mind whether to be in a central business district, a residential shopping area or a new development. Whichever his choice, he will have to check with the authorities over zoning regulations. And even if he has the law on his side, he is wise to find out from neighbors how they feel about a doctor's practice among them.

The choice of site often requires the services of a reliable real estate man and an architect. Such items as rent, lease, building site, room for expansion, whether to remodel, demolish or build on an empty lot are questions for experts.

Digging

We have described what the doctor must look for, both personally and professionally, in his choice of location. Let us detail just how he goes about digging up the information he wants.

To determine the geographical and climatic nature of the location that interests him, as well as such vital statistics as population, industries, transportation facilities, cultural and educational institutions, parks, etc., the doctor has several resources. Any public library can be a well of information. It has geographic and industrial atlases

and books, journal articles and pamphlets on every corner of the U.S.A.

The doctor can also write to the Chamber of Commerce of both city and state that interest him. The national headquarters of his lodge, veterans organization or similar group would be glad to supply him with names of non-doctors living in the specified area.

Professional contacts

To learn of his professional opportunities, the doctor writes to state, county and city medical societies and asks for literature and advice on every phase of setting up practice. He contacts the registrar of his medical school or editor of his alumni newsletter for names of alumni practicing in the area, with special request for names of classmates. He writes to his medical school professors or asks his residency attendings if they have ever been in the area or know anyone who has been there or is there now. He writes to a clergyman of his faith there, specifying both his personal and professional problems.

The personal visit, of course, is a must for any real insight into the intended location. If it is to be only a quick once-over, at least the people written to can be visited, the area observed, the hospital examined. A longer stay is preferable. The doctor might spend his vacation in the new area or at least a week-end there, if it is near enough.

Two other alternatives are to get a job there, as assistant, let us say, in a doctor's office—such jobs are advertised in the medical journals—or, if one's residency is not yet complete, to wind it up in the region's hospital. This latter choice gives full acquaintance with the hospital in all its facets—equipment, procedures, visiting staff, nurses, administration. It leads to a practice that at least does not have the element of unpleasant surprise.

No larks

In conclusion, let us give this warning. Do not seek a different location as a lark, as a fulfillment of an inner urge for one more adventure before "settling down." You are at this moment, or certainly should be, mature and on the brink of a major decision. Failure in this decision can embitter you needlessly, even turn you from a type of practice to which you are well suited and into other less wise avenues.

Success in choice of location is more likely than not gained in an unspectacular manner, after months of careful investigation. It is a prerequisite to a satisfying practice in the "ideal" location.

A Comparison: Medical Practice in America and Great Britain

Here is a revealing report on characteristics of medical practice, education and specialty training in England as compared to the United States. Each country, says the author, has something to learn from the other.

Graham Beaumont, M.B.Ch.B.

During my short stay in America I have been impressed with some interesting differences in the medical system here as compared with our own in Britain.

I have been made aware, also, that the American doctor has many misconceptions regarding British medical training and practice, particularly in regard to our National Health Service.

In order to illustrate these differences as I see them, I find myself in a delicate situation. As a guest in this hospitable country, it would be churlish of me to criticize my host's management of his own affairs. On the other hand, as a loyal Englishman it would be treasonous to acknowledge publicly that the American medical machine is in any way superior to our own.

Ignoring, therefore, the advisability of keeping silent, I propose to deal briefly with six different aspects of medicine, and shall endeavor to present factual information to point out differences in our systems rather than air my own views.

Training in Britain

A physician's training starts, I think, long before he tremulously advances on the cadaver allocated to

him in the anatomy theatre. To compare our systems means that we must look, therefore, first at our respective educational backgrounds.

The British child attends a "primary" school from five through eleven years of age; then, if he shows sufficient merit and his parents have sufficient ambition, he will go to a "grammar" or possibly "public" school. Here for seven or eight years he studies the basic sciences, literature, and humanities.

At approximately eighteen years of age he takes the Certificate of Education at an advanced level, and depending on the grade obtained, he can, if he wishes, proceed to a university, usually with adequate financial support from the State. "Working one's way through college," common enough in America, is quite unknown in Britain. Our would-be British doctor, therefore, finds himself at university at eighteen years of age. He does not, however, embark on several years study of the liberal arts and "pre-med" as does his American cousin, but plunges headlong into medical school.

The course of study for a medical degree takes five or six years and consists of two or three years of preclinical work, and three of clinical work. These latter years consist of a rotation through both major and minor specialist fields, and include a six months' period attached to an internist, six months to a surgeon, three months in pediatrics, and three months in obstetrics and gynecology.

Shorter periods are spent in dermatology, otolaryngology, etc. Examinations, designated 1st, 2nd, and 3rd M.B.'s, etc., are infrequent and do not occur more often than once a year; frequent "prelims" are not the rule either in a medical or any other university course in Britain.

On successfully completing his final examinations at the end of the fifth year, the candidate receives his medical degree variously abbreviated according to his university as M.B.Ch.B., M.B.B.Ch., M.B.B.S., etc. An equivalent degree conferred by the Royal College of Physicians and Surgeons is the MRCS-LRCP (Member of the Royal College of Surgeons, Licentiate of the Royal College of Physicians).

Before a doctor is allowed to enter private practice, however, he must be registered as a medical practitioner by the General Medical Council. Since 1953 this has entailed a compulsory period of twelve months approved postgraduate hospital work. The majority of doctors, I may say, voluntarily undertook this training previous to 1953, realizing the importance of this experience.

Postgraduate training

The major difference between our systems of postgraduate training is that in Britain the residency system has not been adopted, that is to say the British doctor does not work within the framework of a graded long-term, hospital appointment with all its accompanying emphasis on

continuing to instruct the doctor at the same time as he acquires practical experience.

In Britain, once the student is possessed of his degree, all formal instruction ceases. A partial exception exists in the case of teaching hospitals where Grand Rounds and CPCs do provide instruction for all, and a second exception in the postgraduate schools where intensive cramming, pre-examination courses are given.

By and large, however, the doctor learns by practical experience, by example, and by careful attention to the pearls of wisdom dropped by his immediate seniors or consultant chief.

This system, strange though it may seem to Americans, appears to work very well. One disadvantage, to my mind, is that since the senior staff is under no obligation to teach, a disinclination on their part can substantially reduce the value of a particular post.

A possible advantage, on the other hand, is that the junior resident has to accept and tolerate responsibility early, and that he learns quickly and avidly in order to survive the first hectic months of any job.

A second difference in our system is the absence, in Britain, of rotating internships. This institution appears, on the surface certainly, to offer an excellent introduction to general practice, or an opportunity to "play the field" a little before settling to a specialty.

House officer

The most junior hospital post is that of House Officer (H.O.). These are available in all specialties, carry an annual salary of approximately $850 plus board. Since these positions are for six months only, they create a somewhat distracting problem for the holder, that of finding further appointments at frequent intervals in order to continue to earn his daily bread.

About The Author

Graduated M.B.Ch.B. from the University of Birmingham (England) in 1952, the author spent eighteen months rotating through internal medicine, surgery, and obstetrics and gynecology in England. After two years in the British Army as a national service industrial officer, he entered general practice in England. In 1956 he came to the U. S., spent one year as a resident at the Cornell University Infirmary at Ithaca, N. Y., became interested in U. S. residency programs and in the methods of practice, and decided to continue with additional training in internal medicine. His goal is a career in academic medicine. At present, Dr. Beaumont is a resident at the Minneapolis General Hospital.

The HO is responsible for admission histories, physicals, initial treatment, and, depending on the hospital, for a varying percentage of day to day management. He may or may not be required to take blood samples, depending on the capabilities of the nursing staff. He does, however, start I.V. medications.

A house officer will act usually as first assistant at the operating table, and will himself perform minor operations, and after a little experience more major ones—appendectomies, tonsillectomies, etc.

He attends to the chronic and unglamorous problems in outpatient sessions, and does his best, while on duty to affect rapport with the ward sister.

He is, in short, a frantically busy individual and usually badly needs his two weeks leave on completion of the six months duty. In contra-distinction to his American counterpart, the intern, he wears no uniform but sports a white coat over his suit.

He is almost invariably unmarried.

Two H.O. posts are prerequisite to registration, i.e., licensure, and the doctor may then, if he wishes, embark on general practice.

There is no equivalent to the state licensing examinations as exist here; each British university baccalaureate being widely recognized even outside the United Kingdom.

As an alternative to entering general practice straight away, the doctor may broaden his skills by taking further H.O. posts in perhaps obstetrics and pediatrics.

I may add, that there is no shortage of applicants for all jobs in the major specialties, and a candidate may have difficulty in obtaining just what he wants—this is, I think, in contradistinction to conditions here.

Senior

Again, on the other hand, he may pursue a specialty training in one of the specialist fields in which he has already served, by obtaining the next most senior grade — that of Senior House Officer (S.H.O.) equivalent to your assistant resident. This man may—as even may the H.O.—be directly responsible to the consultant, and have no senior resident rank to appeal to in times of difficulty. The S.H.O. holds a post for one year and receives approximately $1700 and maintenance for his services.

Registrar

The next grade up the promotion ladder is that of Registrar, these posts being divided into *junior, middle* and *senior* grades. The first two grades are normally held for two years, the latter may be extended into four. Each grade is, of course, more difficult to obtain than the last, and a senior registrar will possess upwards of six years experience in his specialty and usually has obtained a major postgraduate degree in this same field.

The annual stipend for junior

registrar is approximately $2000 and for a fourth year senior registrar is approximately $3800.

Not all hospitals have posts available at each grade; the number and grade of residents allowed is fixed for each hospital under the National Health Service.

As senior registrar, one's efforts are bent on acquiring a permanent appointment either as a fully fledged consultant or as a Senior Hospital Medical Officer (S.H.M.O.) (The initials just happened to come out that way). The latter, though permanent, is something of a compromise between full consultant status and senior registrar.

Consultants and S.H.M.O.s are both appointed and remunerated by hospital boards set up under the National Health scheme.

Overcrowded

At present, there are too many senior registrars for the number of consultant vacancies in both the major and minor fields. The unlucky candidate, despite his perhaps ten or more years of training, can only hope to renew his position or attempt entrance into general practice. (However, in the latter field, because of his specialization he may be regarded as undesirable.)

A further alternative lies in taking himself off to outposts of the British Empire and Commonwealth where more room may exist.

Much confusion probably exists in American minds with regard to British medical degrees and their abbreviated forms appearing behind a graduate's name. I shall endeavor to show that accurate translation of these initials depends, rather like the mastery of a new language or a party game, on the knowledge of some basic "roots."

For example should "M" precede the other letters, one can safely assume it designates *Member*; similarly an "R" (occurring early in the order) usually implies *Royal* (occurring later, *Radiology*).

In this way one can quickly know the meaning of these abbreviated degrees, and thereupon honor the holder with his appropriate skill.

Listing

Following is a 'glossary' of some of the commoner medical degrees:

M.B.Ch.B.—Bachelor of Medicine. Bachelor of Surgery. (Ch.=Chirurgery).

M.R.C.S.L.R.C.P.—Member of the Royal College of Surgeons. Licentiate of the Royal College of Physicians.

Postgraduate degrees

M.R.C.P. and F.R.C.P.—Member of the Royal College of Physicians and Fellow of the same, these latter being elected to their fellowships. Both of these degrees apply to internists.

F.R.C.S.—Fellow of the Royal College of Surgeons.

M.R.C.O.G. and F.R.C.O.G.—Member of the Royal College of Ob-

stetricians and Gynæcologists — and Fellow of the same.

F.F.A.R.C.S.—Fellow of the Faculty of Anæsthesia of the Royal College of Surgeons.

M.D.—Doctor of Medicine.

M.S.—Master of Surgery.

Diplomas

D.C.H.—Diploma of Child Health.

D.R.C.O.G.—Diploma of the Royal College of Obstetricians and Gynæcologists.

D.P.M.—Diploma of Psychiatric Medicine.

D.P.H.—Diploma of Public Health.

D.I.M.—Diploma of Industrial Medicine.

D.T.M. and H.—Diploma of Tropical Medicine and Hygiene.

D.Path.—Diploma of Pathology.

D.L.O.—Diploma of Otolaryngology.

D.A.—Diploma of Anæsthetics.

D.M.R.D. and D.M.R.E.—Diploma in various branches of Radiology.

Titles

Why do we have so many titles, and what are their significance? They are, of course, directly analogous to the American Specialty Boards, and a prerequisite to any doctor hoping for consultant employment under the National Health service. As a rule, a diploma is a junior qualification only; to be adequately equipped to meet consultant hospital selection committees, this must be augmented by possession of one of the three or four major specialty qualifications enumerated above. These latter are much coveted, and eligibility for the examinations includes varying periods of experience in the specialty.

A special word about the M.D. This is a senior postgraduate qualification pertaining to internal medicine and is granted by examination and by the production of a thesis. It would seem comparable to a Ph.D. in internal medicine here.

Consultant

In Britain, the specialty practice is called, consultant practice. As its name implies, the consultant's work is almost entirely devoted to patients referred to him by GPs and consultants in other fields.

Rarely does a patient himself decide the general nature of his malady and approach the appropriate man.

In contrast, this latter course of action seems to be fairly common in America, that is, where specialist services are available. As a result in this country, a child receives his immunization and has his measles cared for by a pediatrician; a surgeon may lance a boil; a laryngologist cares for a sore throat; an internist for grippe; a urologist for pyelitis; an ophthalmologist refracts one's eyes where in England an optometrist would be consulted; an obstetrician supervises the majority of pregnancies, and what is more surprising, delivers one's baby, and so I think the story would appear to read throughout the specialties in the United States.

In Britain, the patient passes through the diagnostic net of the general practitioner and is treated by him or referred to the consultant as the case demands.

The British consultant is employed under the National Health Service by Regional Hospital Boards, to organize and practice his specialty in a hospital.

His assignment may be a part-time one which allows him the privilege of building a private (but still 'consultant') practice as well; or if a full time post, there is an understanding that his professional services shall be donated solely to the hospital.

National Health Service

In Britain, in 1948, various systems of largely voluntary medical insurance were superseded by the implementation of the National Health Insurance Act which had been passed in 1946. Under this act the state assumed responsibility for providing 100% medical care for the entire population of Great Britain. British doctors, acting under the leadership of the British Medical Association, rather reluctantly agreed to act as the government's instrument in this great undertaking. The circumstances surrounding this, what would now appear, ill-advised acceptance by the profession of the government plans are interesting in that they involved the payment of compensation by the government for the loss of the right to sell a practice to those doctors entering the contract not later than July 5, 1948. Naturally enough, since the evolution of a state sponsored service seemed inevitable, the profession reluctantly discarded its doubts and entered into "partnership" with the government.

The public since that time has received unlimited hospital, maternity, doctor's consultant services; radiological, diagnostic, public health and preventive medical services, all free, or very nearly so. No aspect of medical or dental care is not available to the public under the scheme. In addition, members of the public have been free to choose whichever doctor they please to register with, and are free to change their doctor as often as they wish—this in contradistinction to a popular notion held in America.

Looking into the future it is planned to operate the scheme through the function of Health Centres. These are to consist of buildings where general practitioners can work together with good facilities and where child welfare clinics, preventative medical clinics, dental clinics and pharmaceutical services can be set up. This conception is a major attraction to the doctors and when implemented will go far toward improving relations between government and profession.

Costs and fees

What price does the public pay? The 1957-58 estimate is 690 million

pounds for one year (approximately two billion dollars), this being derived from taxes, the only direct contribution made being 25c per week by employed or independent persons, the payment of 14c on every item of a prescription, and a percentage towards the cost of dental care, spectacles and prostheses.

What does the doctor receive? The general practitioner, for his part, is paid by quarterly check from the government on a per capita basis of all the people registered with him for their medical care, regardless of whether he has treated them a hundred times in a single year or has not seen them at all. The amount of this fee is set at approximately $4 a registered patient a year. Naturally this system favors those practicing in densely populated areas and penalizes the rural practitioner. At a guess I would estimate the average general practitioner's salary at between $5,000 and $6,000 per annum. Our cost of living difference makes this equal to $10,000-$12,000 in the U. S.

The consultant is employed by a Regional Hospital Board and receives a fixed salary, the amount depending on whether he is employed on a full or part time basis.

Early diagnosis

What are the advantages of a National Health scheme? To the public they are manifold; the most important being that the fear of heavy financial strain in the event of illness has been removed. The best doctors, most-up-to-date equipment, expensive medications, and even convalescent facilities are available to all for as long as necessary. Again, there is no doubt that people see their doctors more frequently now, thereby increasing the possibilities of early diagnosis.

The advantages to the physician are that he is relieved of bill collecting, and knows that financial considerations need not enter into a patient's management. In particular, specialist's services are available both in the hospital, outpatient department and in the patient's own home. He is free to exercise a right to demand a transfer of any unscrupulous patient from his list, and is under no compulsion from the government to have to practice in any one area—this statement, I hope, will correct any previous misconceptions readers may have had on this score.

Disadvantages

The disadvantages to the public are that waiting rooms are full, and hospital waiting lists, particularly for minor operations, tonsillectomy for example, are long. If an individual desires still to be a private patient, however, he can receive any doctor's services he chooses and can pay doctor's fees as before—in addition to his weekly National Health payment. Moreover, he may have private accommodations in a hospital if it is available, though this is ex-

pensive unless he is lucky enough to secure one of the few so called "private" beds available under the National Health scheme.

For the most part, however, patients are unwilling to pay for their medical services as it were twice over; thus there is very little private practice in Britain at the moment, and I imagine this amount will tend to decrease as the years accustom those of the older generations, who regard 'free medicine' as charity, to the new order of things.

Paper work

Certain disadvantages to the doctors, on the other hand, may or may not, under present arrangements, diminish with time. First, the thorny question of remuneration. Many doctors now earn more than previously; many, notably small rural practice physicians, earn less, and some claim their incomes are inadequate to support them in the manner to which they are accustomed.

Secondly, a vast legacy of paper work has descended on the doctor. He writes almost as many certificates as prescriptions, these cover a host of patient's needs; in particular, sickness certification to enable the patient who is temporarily disabled from work to draw a small subsistence payment.

Others include various certificates for the expectant mother, certificates for cheap milk, eye refractions and many others. Thirdly, more patients seek treatment from their G.P. than he can comfortably handle; this means diagnostic short-cutting, hasty consultations, more people referred to consultants for definite diagnosis. These last two disadvantages, it is maintained, tend to reduce the strength of the indispensable 'patient-family doctor' bond.

Doctor's dilemma

Against a background of pinpricks and petty frustrations, the British doctors have done their best to make the scheme work. There is no doubt that the public would strongly oppose any reversion to the fee paying system, and there is no doubt that the nation's health was never better. Be that as it may, the doctors have this year found themselves in what many consider an intolerable position. The spark to the powder has been the government's refusal to implement the conditions set down at the inauguration of the scheme, by the so called "Spens Committee," which ruled the procedure for increasing the doctor's return in proportion to the over-all rise in the cost of living. On the basis of these latter considerations, the profession claims a 24% increase in remuneration. The government refused; the profession suggested the setting up of an arbitration committee, and pointed to the parallel in industrial disputes. The government refused this also, but proposed the setting up of a Royal Commission to investigate the case in the light of its relation to other

professions; not, however, on its own merits, nor on the basis of the original agreements and the subsequent modifications.

The Royal Commission consists of a small group of highly respected men numbering among them leaders of commerce, industry and the professions other than medicine. In view of the nature of the Commission's terms of reference, one of which is described above, the doctors are divided on whether to accept their recommendations when made — or not. The B.M.A. has proposed that the profession must act now to reassert its independence, before entering into further agreements which. when put to trial may not be honored by the government of the day. It is suggested, therefore, that the B.M.A. obtain a resignation from the service by all G.P.s, which will be put into effect in certain areas only. Thereafter, the practitioners in these areas will treat the patients free for one month, and will charge nominal fees thereafter.

At present, discussion within the profession is heated as to the advisability of this step, as many feel that it will alienate public opinion, and thereby weaken the doctors' position.

Whatever the outcome of this present domestic disturbance, it has been demonstrated beyond doubt that a form of medical insurance for 100% of the population is most desirable, and in these enlightened days, an indispensable step. I regret to say that I have seen sufficient in America, of incomplete medical insurance coverage possessed by a percentage of the population, to make me a wholehearted advocate of compulsory insurance plans.

Left to themselves many people are reluctant to invest in ill-health, they are blind to the fact that they and theirs might fall ill, might need prolonged hospital treatment, and might be ruined financially as a result. The spectacle of the chronic sick languishing their life-savings away in hospital beds when past their productive years is a very pitiable one.

It is disturbing, also, to hear of the individual putting off that "visit to the doctor," despite the presence of symptoms, because of financial considerations. Again, it would seem not uncommon for some forms of medical insurance plans, entered into by the unwary, to turn out to be far less comprehensive than cursory inspection would lead one to believe. I can think of no scheme outside 100% compulsory medical insurance which will be free from loopholes for the unwary, the careless, and the infirm to slip through with embarrassment to themselves and to their doctors.

In Britain our National Health scheme has been in operation for only ten years; difficulties have occurred and will occur again, such a vast organization will have many teething troubles, but the one basic fundamental of over-all medical

ervices for everyone will, I'm sure, e maintained throughout all modi-ications.

Nursing services

To discuss our sister professions s at all times to merit rebuke and orrection; to attempt to compare British and American nurses is empting fate itself. I shall confine myself, therefore, to a description of he British nursing profession as I now it, with some few remarks on ny striking differences between the wo systems and leave the reader to raw any conclusions he wishes.

In any nursing service the corner-tone is, to my mind, the ward head urse, or as she is called in Britain, ard sister, a name perhaps re-ained from the time when the nun as largely responsible for nursing re. The British sister is a woman f considerable experience and one hose word on nursing matters and rocedure is absolute law on the ard. Woe betide the doctor who uestions on a nursing matter, and for receiving criticism from the ursing staff, one would as soon uery a sergeant-major's parade round orders! She wears a colored niform, usually of dark blue, and ith starched white cap, apron and iff white cuffs; a most imposing gure she looks. A good sister, and aspire to the position, one has to ave outstanding organizing ability nd leadership, is a boon and a lessing to the harassed intern and nsultant alike. Under her direction she may have one or more state registered nurses (S.R.N.), known in their positions as second-in-command as Staff Nurses; and in a training hospital, under these women, are the trainees undergoing their three-year instruction program leading to their examination for S.R.N. certification.

The trainees wear different colored uniforms, and sport varying quantities of lace on their caps according to seniority. The general ward work is apportioned according to rank, the first year staff coping with the least glamorous jobs.

The American system of staffing a ward with nurses of different classes; registered nurses, practical nurses, nurses aids, etc., and subdividing the labor according to the responsibility vested in them, is unknown in the United Kingdom. There, all the staff members aspire to possess the S.R.N. except possibly in very small hospitals where members of the lay public may do some aide work. Presiding over the whole hospital staff is the matron, a figure, usually of riper years, bringing the experience of many years of devoted service as a sister to her job of organizing and supervising the nursing services. She is the equivalent to the American director of nursing services.

In view of her onerous duties, she wears usually, a costume of dark brown or navy blue, topped with a cap embodying a most generous frieze of decorative lace, and ap-

pears always to be surrounded by an aura of immense respect and veneration. She will make a round of the hospital at least once daily, and will briefly see the difficult cases accompanied by the sister and staff nurse, the cortege resembling an archbishop in full regalia presiding at the funeral service for a humble but well-loved colleague.

The juniors vanish on sight or if possible before, remembering their maxim to "run only for hemorrhage, fire, and matron!"

Even sister is likely to appear preoccupied at the matron's appearance, and is likely not to be listening to your social chit-chat or comments on the patients.

What is the end result of this organization, which is not unlike a military one in the attention given to discipline and the preservation of strict observance of rank? The end result is a trained nurse, capable of keeping her head in an emergency and maintaining a calm front in times of stress; whose appearance and demeanor inspires confidence, who can accept and bear responsibility, and who is at all times thoroughly reliable — surely a most worthwhile attainment.

General practice

Even a superficial comparison of general practice here and in Great Britain is difficult since the National Health Service tends to blanket any fundamental differences which might exist.

As I have attempted to show already, there is a lessening need in Britain for the G.P. to accept responsibilities for which his training has perhaps inadequately prepared him; since specialist consultation and hospital admissions are readily available. In addition increasing stress is being laid on providing outpatient laboratory facilities for the practitioners at nearby hospitals; again, more and more mothers are having their babies in hospitals, though, I might add, the percentage of domiciliary confinements still lies around 50% of all births.

These factors plus the greater number of patients now seeking his advice has wrought a change in the G.P.'s work. Early specialist referral is the rule and office laboratory procedures, which I think it is true to say, rarely exceed a routine urinalysis, are not encouraged by a system providing these outpatient laboratory facilities. Such procedures as office E.K.G.'s, X-Rays and B.M.R.s are left entirely to the specialist, being time consuming and unrewarding financially since no charge can be made either to the patient or to the Health Service, and because in addition there is a general feeling that the patient's best interests are thus being served.

Assistance

Secretarial and nursing help is used also to less extent than in America. Many G.P.s have no help other than a long-suffering wife

many will share the services of one secretary with another partner. Electrical recording and similar devices are also employed to a much smaller extent. The reason for this seeming strange state of affairs is simple enough, it is regrettable that merely increasing one's efficiency in this way does not increase one's income. This latter is only possible by increasing the size of the patient list towards the maximum allowed by the government of 3500 patients per doctor. The same reasons account perhaps for the too large a number of dismal and antiquated buildings and furnishings seen today in British general practice. It is impressive to find here that many G.P.s are able to work an appointment system of consultations. Unfortunately, this admirable achievement is scarcely possible where perhaps 40 or more patients must be seen and advised during each of the two office sessions of the day, as is common in city practice in Britain. As a rule British G.P.s work in groups of two; or three or more sharing the duties so as to provide a very necessary period of leisure time. Where working single handed a doctor may devise a roster system with a nearby colleague to cover week-ends.

Hospital facilities

It is not the practice in Britain for a G.P. himself to treat his patients in hospital, except in a small number of so-called "Cottage Hospitals" where he can admit, treat, and have sole charge of his patients. The vast majority of patients, however, once admitted to hospital, pass into the care of the hospital consultant and resident staff. On the patient's discharge from hospital, a covering letter goes to the G.P. from the specialist outlining follow-up treatment, and possibly requesting that the patient be sent back to the O.P. department for his review.

Trend

We have in Britain a force of G.P.s acting as a first line defense, having easy access to specialist opinion, treatment, and specialist hospital facilities. This trend towards treatment of the more serious ailments by the specialist, which is after all a universal one, has received great impetus with the inception of the N.H.S.

American patient

To define the average patient of any race is as difficult as to define the average man. Many small factors have led me, however, to some conclusions regarding the patients on this and the other side of the Atlantic.

In Britain, the body and its functions, recent advances in therapeutics, and "miracle" operations, have not yet become quite the happy hunting ground for magazine writers that they have in America.

Thus, the British doctor is generally spared the embarrassment of a patient's questions regarding the

very latest in therapy, as described in a current digest, for his personal malady, be it recurrent tennis elbow or advanced malignant disease.

Similarly, the "man in the street" does not carry in his head his most recent blood pressure recording, or blood sugar estimation. He is content to leave his body in the hands of his Maker, with an occasional adjustment by his physician as the need arises — rather as the average American regards his automobile.

To the average Englishman the idea of a six months check-up is practically beyond belief; a practical rule, after all, is to consult one's doctor only when one is ill. In any case, where the doctor would, under present circumstances find time for performance of these numerous routine "physicals" is hard to say.

Respect

The English patient's same phlegmatic attitude can be seen in his actual dealings with his doctor. A detailed discussion of his malady with physiological and pathological background is quite unnecessary. As a rule a diagnosis is accepted, and therapeutic suggestions carried out with a minimum of questions asked. This behavior, which I trust will not be taken as an indication of mental torpor, arises both from a lack of awakening to "popular" medicine as over here, and also because of a certain reverence in which the doctor is held.

This latter stems in itself from a respect for the doctor's knowledge on the one hand, and for his position as a member of the professional class on the other. In America's relatively classless society, this regard for the professional man is very much less in evidence.

Seen from the doctor's viewpoint, there is in Britain, a parallel tendency to shield the patient from the dangers inherent in producing muddled concepts in his mind of his own body's functions and dis-functions; for this reason involved explanations are studiously avoided.

Interest

How does the American patient compare? His "armchair" study gives him a grossly distorted smattering of medical knowledge. He takes a greater interest in his sickness, and is likely to see through a doctor's too glib explanation. He must have a "label" for his condition and will write it down in his notebook for future reference. Thus the land teems with healthy people delighting in a ghoulish past history. He is thoroughly conditioned to his regular "physical" and will cheerfully submit himself to endoscopy and other unpleasant procedures—despite having to pay for the privilege. The American knows his blood pressure and eagerly asks for the latest "score" even before the physician has disentangled his stethoscope.

With regard to the doctor-patient

relationship here in the United States, there is the ease and informality indispensable to good doctoring in any country, but which is often unfortunately coupled with a familiarity on the patient's part which comes as a slight shock to British, and probably to other European doctors also. With this familiarity can sometimes come thoughtlessness and excessive demands—the doctor being summoned and dismissed as the patient pleases.

For the doctor's part, explanations seem very necessary and a differential diagnosis may be discussed freely with the patient. It must be every doctor's experience, however, that although at the time these careful explanations seem to be understood, one is likely to be sadly disillusioned regarding the patient's retentiveness at the next consultation.

In view of the somewhat superficial nature of my acquaintance with American methods, I cannot at this time closely evaluate the merits of the two systems. Briefly, however, it is obvious that both the British and American professions could each learn something from the other. We in Britain could profit, I feel, from a study of the American postgraduate residency training system, and possibly also from general practice as it is seen at its best here.

On the other hand, Britain's consultant services I believe are second to none, and our concept of 100% over-all medical insurance is one that will, in some form or other, have to be adopted elsewhere, in the face of increasing costs.

It is difficult to affect the patient's attitude one way or the other, and with regard to our nursing professions, I am quite sure that for their part they would rightly consider any advice from us a gross impertinence.

"Take me to your leader . . ."

The Doctor Speaks German

You don't have to be a language expert to handle a medical history and examination of a non-English-speaking patient. Here are medical words and phrases to help you break the language barrier.

To ease the anxiety of the patient and to help the physician conduct an efficient, accurate examination and history-taking, RESIDENT PHYSICIAN has compiled a list of commonly used medical directions, questions and answers with translations into various foreign languages.

When using this language guide keep it open in front of you while talking with or examining your patient. Don't be overly concerned about getting the exact pronunciation of foreign words. If a word doesn't seem to be understood by the patient, repeat it a few times slowly, varying the pronunciation slightly until the patient indicates his understanding. Remember, the very fact that you are trying to speak to him in his native language will cause your patient to be more relaxed and responsive. Grateful for your efforts, he will do everything he can to comprehend and convey accurate, precise information.

For Examination of German-speaking Patients

Basic rules of pronunciation

In general, German words are pronounced very much like Latin words.

a or aa — ah, father
e or ee — ay or eh
i or y — ee
o or oo — oh
u — oo
ä — ay
ö — er in 'her'
ü — ee
äu or eu — oy
au — ow in 'how'
ai or ei — y in 'my'
ie — ee

c before e, i or y — ts
c in other cases — k
ch — ch in Scotch 'loch'
g — g in 'go'
h is sounded, but silent after a vowel
j — y in 'yes'
qu — kv
sch — sh
sp, st — shp, sht at the beginning of a word
v — f
w — v

Courtesy phrases

NOTE: Normal courtesy requires the use of the name after the title Herr (Mr.) , Frau (Mrs.) and Fräulein (Miss), if it is known. If the name is not known, the title is best left out.

Good morning	Guten morgen
Good afternoon	Guten tag
Good night	Guten nacht
Please	Bitte
Please sit down	Bitte setzen sie sich
How are you	Wie geht es Ihnen
Very well, thanks	Danke, sehr wohl
Do you understand	Verstehen sie
I understand (do not)	Ich verstehe (nicht)
Excuse me	Entschuldigen sie
Pardon me	Verzeihen sie
Very good	Sehr gut

Today	Heute
Tomorrow	Morgen
Yesterday	Gestern

Anatomical terms

head—der kopf	chest—die brust
eye(s)—das (die) auge(n)	lungs—die lunge
ear (s)—das (die) ohr(en)	shoulders—die schultern
nose—die nase	tongue—die zunge
mouth—der mund	throat—der hals
teeth—die zähne	finger—der finger
neck—das genick	leg(s)—das (die) bein(e)
heart—das herz	feet—die füsse
stomach—der magen	hands—die hände
bladder—die blase	rectum—der mastdarm
back—der rücken	buttock—das gesäss
arms(s)—der (die) arm(e)	womb—die gebärmutter

General questions

do you feel sick	fuehlen sie sich krank
do you have pain	haben sie schmerzen
— much pain	— heftige schmerzen
— mild pain	— milde schmerzen
where	wo
here	hier
when	wann
how many years	wie viele jahre
how many days	wie viele tage
how many hours	wie viele stunden
how many times	wie oft
where were you born	wo sind sie geboren
how old are you	wie alt sind sie

Directions to patients

do as I do	machen sie mir nach
relax	entspannen sie
relax more	entspannen sie mehr
open your mouth	öffnen sie den mund

open your eyes	öffnen sie die augen
breathe deeply	atmen sie tief
breathe through your mouth	atmen sie durch den mund
hold your breath	halten sie den atem an
push	drücken sie
cough	husten sie
please don't move	bitte, halten sie still

Diseases—Krankheiten

measles	masern
scarlet fever	scharlach
chicken pox	windpocken
small pox	echte pocken
pneumonia	lungenentzündung
typhoid fever	typhus
enteritis	darmkatarrh
U. R. I.	erkältung

Systemic inquiry

Head	
trauma	verletzung
unconscious	bewustlos
did you faint	waren sie ohnmächtig
are you dizzy	sind sie schwindlig
headache	kopfschmerzen
Eyes	
sight	sehkraft
clear vision	klares sehen
near	kurzsichtig
far	weitsichtig
Ears	
he is deaf	er ist taub
noise in the ears	geräusch in den ohren
Nose	
coryza (head cold)	schnupfen
did you have nosebleed	hatten sie nasenbluten
Throat	
do you have frequent sore-throat	haben sie oft halsschmerzen

Gastrointestinal

do you have a good appetite	haben sie guten appetit
do you have a poor appetite	haben sie schlechten appetit
are you nauseated	haben sie brechreiz
were you nauseated	hatten sie brechreiz
do you vomit	brechen sie
do you have diarrhea	haben sie durchfall
are you constipated	sind sie verstopft
did you have a B.M. today	hatten sie heute stuhl
feces	stuhl
black	schwartz
white	weiss
yellow	gelb
brown	braun
bloody	blutig
do you have cramps	haben sie krämpfe
after meals	nach dem essen
before meals	vor dem essen
did you take a laxative	haben sie ein abfuehrmittel genommen
did you take castor oil	haben sie rizinusoel genommen

Genitourinary

urine	urin
do you get up at night to urinate	müssen sie während der nacht urinieren
does it burn	brennt es
chills	haben sie schuettelfrost
fever	haben sie fieber

Cardio-respiratory

do you tire easily	ermüden sie leicht
are you short of breath	sind sie kurzatmig
does your heart beat fast	haben sie herzklopfen
do your feet swell	haben sie geschwollene füsse
do you have a pain in the chest —sharp pain	haben sie schmerzen in der brust —scharfe schmerzen

—dull pain	—dumpfe schmerzen
—when you breathe	beim atmen
do you cough	husten sie
do you spit	spucken sie
sputum	haben sie auswurf
bloody sputum	blutigen auswurf
have you lost weight	haben sie abgenommen
does someone in your family have a cough	hustet jemand in ihrer familie

Obstetrics and gynecology

at what age did you begin to menstruate	wie alt waren sie als sie die erste menstruation hatten
how many days do you flow	wie viele tage bluten sie
1 to 10	eins, zwei, drei, vier, fuenf, sechs, sieben, acht, neun, zehn
do you have a discharge	haben sie einen ausfluss
when was your last menstrual period	wann hatten sie ihre letzte menstruation
do you have pain with your menstruation	haben sie schmerzen bei der menstruation
are you pregnant	sind sie schwanger
how many times have you been pregnant	wie oft waren sie schwanger
how many children have you had	wie viel kinder hatten sie
how much did the largest weigh at birth	wie viel hat das schwertse bei der geburt gewogen
what was the duration of labor	wie lange hatten sie wehen
did you have trouble with the child's delivery	war es eine schwere geburt

Pediatrics

how are the child's stools	wie ist der stühl des kindes
—constipated	—verstopft
—diarrhea	—durchfall
—how many a day	—wie viele im tag
how is the child's appetite	wie ist der appetit des kindes

any vomiting	brecht es
does the face turn blue	wird es blau im gesicht
does the child seem tired	erscheint das kind müde
does it hurt	tut es weh
it won't hurt	es wird nicht weh tun
it will be finished in a minute	es wird gleich vorüber sein
do you want a piece of candy	willst du ein zuckerl
did you take the temperature	haben sie das kind gemessen
what was the temperature	wie hoch war die temperature
what a big, handsome boy	so ein schön, grosser bub
what a beautiful little girl	so ein schöne mädel
little one or baby	kleines kind *or* baby
good	gut

NOTE: When talking to an adult use the word *sie* for *you*; when talking to a child use the word *du* for *you*.

"We've found a way to get more work out of the little buggers . . ."

Joseph C. Shipp, M.D.

Guest Editorial

Preserve the Ward Service . . .

Individual responsibility in the care of the patient is essential for the intern and resident. This is achieved only with a ward service managed by the resident staff and supervised by a full time faculty. This is precisely the organization at most of the leading medical centers in this country today. Then why the plea, "Preserve the ward service"?

In recent years two things have happened. Firstly, some work on private and semi-private wards has been introduced as an important part of postgraduate training. In some centers this is during the internship; others add this assignment to the residency years. Most of us agree that a *limited* time on a private service is a valuable experience which complements the ward training. How valuable this is depends on the organization of the private unit and most directly on the attitude of the staff physicians. The senior physician who enjoys teaching is an effective tutor to the house staff members as they care for "his patient." However, the "final decisions," of necessity, are made by the senior physician.

The second influence which is a threat to the ward service is voluntary health insurance in its present form. Over half of the people in this country have insurance

JOSEPH C. SHIPP
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Hospital 1957-58

which will pay for hospital and professional services. There are strong indications that this number will continue to increase. Indeed, this is inevitable and is an enforced realization that medical care must rank along with food, clothing and shelter in the economy of the individual. This awareness on the part of the individual was the life-long plea of the late Dr. Alan Gregg.[1]

What happens when a patient comes to the emergency ward or the clinic of a teaching hospital? He is seen and evaluated by the intern or resident. If hospitalization is indicated and the patient has insurance covering professional and hospital costs, he may be referred to a private staff physician. In certain instances the staff physician may find that there are no beds on the private or semi-private pavilions but that there are a number of beds on the wards. This is where the temptation becomes greatest. The staff physician may argue for admission of the patient to the ward service as "his private patient." A hospital administration will be understandably receptive to any proposal which will add much needed income. These two forces—the need for more private beds and the need of the hospital for money—have led some teaching hospitals to permit the admission of private patients to the wards. Quickly and insidiously the character of the ward service changes. The house staff no longer has direct responsibility. Soon the morale of the interns and residents drops. This disastrous sequence has already happened

1. Gregg, Alan. *Challenges to Contemporary Medicine.* Columbia University Press, 1956. p. 82.

at a number of private teaching hospitals.

Why is this problem of importance to those of us now in residency training? There are two reasons. At this period we see clearly the need for maintaining a service which affords "individual responsibility" for the house staff. Soon, as junior staff members, we may be the victims of limited private beds. At such a point it could be very easy to forget!

This plea is presented with an awareness that the very problems cited require careful and frequent review by the medical school faculty, by the hospital administrators, by the insurance companies and by the medical societies. This is especially true because this changing economic problem is directly related to the stipend which residents receive today. Patients are aware of the excellent medical care which they receive on the ward service of a teaching hospital. Many choose this even when they have insurance to pay for hospital and professional costs. It is the contention of the writer that this should be encouraged and the added income so derived should be used to supplement the stipend of the resident staff. Yes, a Utopian conclusion — continued individual responsibility for the intern and resident who will be paid a living income.

THE PROTOCOL and subsequent clinical and pathological discussion concerns a patient with rheumatoid arthritis and periarteritis nodosa. Rather than a single discussor, Dr. Gustave J. Dammin, Professor of Pathology at the Harvard Medical School and Pathologist-in-Chief, Peter Bent Brigham Hospital, selected a panel composed of Dr. George W. Thorn, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School and Physician-in-Chief, Peter Bent Brigham Hospital; Dr. Theodore B. Bayles and Dr. J. Sydney Stillman, Jr., Clinical Associates in Medicine, Harvard Medical School, and Director of Research, and Chief of Medical Service, respectively, Robert Breck Brigham Hospital; and Dr. Edward A. Edwards, Associate Clinical Professor of Anatomy, Harvard Medical School and Senior Associate in Surgery, Peter Bent Brigham Hospital.

Clinico–Pathological Conference

Peter Bent Brigham Hospital

This 44-year-old white housewife of Polish-American extraction,* mother of three, was first seen at the Peter Bent Brigham Hospital on Nov. 6, 1957, because of gangrene of the toes.

Present illness

In 1954, at age 39, she had the sudden onset of fever and multiple swollen painful joints. She was admitted to the Robert Breck Brigham Hospital where her symptoms quiesced on several weeks of aspirin and physio-

*April 28, 1958—Patient MS #5L663.

therapy. She was discharged and did well for the next three years except for a period of several weeks during which hydrocortisone (40 mgm/day) was required to control joint symptoms.

In August of 1957 her joints again became inflamed, followed by the appearance of erythematous tender patches on her legs and feet. From these, superficial ulcers developed. These healed in several weeks; however, new ones appeared and she continued to have simultaneous healing of some lesions with the development of new ones.

She was again admitted to the Robert Breck Brigham Hospital on Sept. 18, 1957, complaining more of painful joints than the ulcers. Routine blood and urine examinations were within normal limits. The nonprotein nitrogen was 32 mgm%, fasting blood sugar 74 mgm%, total serum proteins 7.7 gm% with 4.1 gm% albumin. Her serum was positive on two occasions for latex fixation antibodies but failed to show L.E. cell phenomena. Cryoglobulins were not demonstrated in her serum.

On Oct. 7, 1957, a bilateral wrist-tendon stripping was performed to alleviate some of her arthritic disability. Two days later she developed sudden, severe pain in the right fifth toe with cyanosis and coolness. She was placed on heparin and gradually improved with less discomfort and perhaps less cyanosis until October 30 when she experienced a sudden exacerbation of pain in the 5th toe and also in the hallux and right heel with cyanosis in these three areas. She was started on prednisone (80 mgm/day) and frequent injections of meperidine was required for pain. During this period she also had two episodes of transient generalized, erythematous, circinate lesions on the skin.

On November 6, 1957, she was transferred to the Peter Bent Brigham Hospital for a right lumbar sympathectomy.

She appeared chronically-ill and there were diffuse joint swellings and deformities characteristic of advanced rheumatoid arthritis. BP 130/80, T 99°, P 80, R 20. Head, ears, eyes, nose and throat were normal. There were no abnormal lymph nodes. Heart and lungs were normal. No abdominal organs or masses could be palpated. There were three well-delineated ulcers about 2 cm. in diameter on the left leg; one similar ulcer was present on the right leg. The 1st, 4th and 5th toes of the right foot were black and cold; the other toes and the heel were mottled, cyanotic and cool. Dorsalis pedis and posterior tibial pulses were easily palpable bilaterally.

Laboratory

Hinton negative. Hematocrit 41%, WBC 19,250 per cu. mm. with 95% polymorphonuclears, 3% band forms, 1% eosinophils and 1% lymphocytes. Blood urea nitrogen

12 mg%, serum total protein 5.8 gm% with 3.5 gm% albumin. Fasting blood sugar 77 mg%. Serum sodium 135, potassium 4.6, CO_2 25 and chloride 102 meq/L, respectively. L.E. Tests and cold agglutinins were negative.

Course

The sympathectomy was performed on November 14, and subsequently she showed marked subjective improvement. Steroids were gradually reduced and stopped. "Darvon" and occasional dihydrocodeine controlled her discomfort and she was transferred back to the Robert Breck Brigham Hospital. There she had a slight increase in her joint discomfort which was controlled with aspirin, meprobamate and chloroquine (750 mg/day).

On December 20, 1957, her right foot again became exquisitely painful. She returned to the Peter Bent Brigham Hospital for a transmetatarsal amputation, but her symptoms markedly diminished with heparin and a rocking bed, and she returned home several weeks later.

On January 21, 1958, she was readmitted to the Peter Bent Brigham Hospital Surgical Service because of one week of severe diarrhea with up to 20 watery stools daily, and the passage of occasional blood clots. BP was 118/76, T 97°, P 130, R 20. She was acutely and chronically ill, crying and moaning. One of the ulcers on her left leg had enlarged to 4 cm. in diameter and had penetrated into the tendons of her leg. There was no major change in the gangrene of her toes. Hematocrit was 37% and the leukocyte-count 5,900 per cu. mm. with a normal differential. Stool contained no polymorphonuclear leukocytes and gram stain showed a mixed flora. Culture subsequently showed no *Staphylococcus aureus;* however, she was treated with erythromycin and neomycin. She was transferred to the Medical Service and again placed on prednisone (80 mgm/day). Her diarrhea subsided in 3 or 4 days.

Resection

On February 8, after remaining stable for two weeks, she suddenly complained of abdominal pain, vomited several times, at first clear fluid and later fecal material. Her abdomen became silent and her liver dullness disappeared with the development of tympani in the right upper quadrant. X-ray showed massive free intraperitoneal air. She was transferred to surgery and a wedge of jejunum containing a 2 by 4 cm. necrotic area was resected. Postoperatively she was supported on parenteral fluids and steroids and did well considering her debilitated state. On February 15 she again noted sharp, epigastric pain and became hypotensive. Re-exploration revealed a perforation at the site of the previous anastomosis. Another resection was performed. Postoperatively she remained in shock and expired on February 21, 1958.

Discussion

DR. GEORGE W. THORN: To open the discussion of this case I have made notes on several points that were of interest to me. The first is the fact that this patient developed an illness characterized by fever and multiple swollen painful joints. This raises the question as to whether we are dealing with infection or with diseases such as rheumatic fever, rheumatoid arthritis or possibly with a malignancy with joint symptoms as the presenting process. I want to ask whether she had a pregnancy in the very near past, for if her disease had shown an exacerbation at the end of pregnancy, one might favor some of the diagnoses more than others. Is there any note in the record as to when she had her last child?

RESIDENT: At least 10 years ago.

DR. THORN: If these symptoms became manifest one or two months after termination of pregnancy, it would influence the diagnosis considerably. The second point is that her symptoms again developed in August. One wonders whether this represented an exacerbation due to ultra-violet exposure, especially since the differential diagnosis included lupus erythematosus. Then we have the skin ulcers. I won't comment on these because the other discussors are better able to do this, but one should keep in mind what part of the leg was affected and whether trauma was a factor in their origin. We know that certain systemic infections can cause skin ulcers. Also we should keep in mind vascular and neurogenic changes.

Another point which interests me is the development of sudden severe pain in her foot following a tendon-stripping operation. If this had been a 45-year-old male, one would immediately think of gout but the description of her difficulty is not in agreement with this diagnosis. The patient had sudden severe pain with cyanosis and coolness. In contrast, the same area if affected by gout

ACTIVE DUTY VOLUNTEERS

The Department of Defense has announced that 600 additional volunteer physicians are needed for active duty during fiscal year 1960 (1 July 1959—30 June 1960).

Dr. Frank Berry, Assistant Secretary of Defense (Health & Medical) stated that the number of applications for active duty from the present intern class is about 600 less than anticipated needs. Applications for active duty after 1 July 1959 will continue to be accepted until all vacancies are filled. If sufficient volunteers do not apply in the next few months, a call will have to be placed with Selective Service under the Doctors Draft next year.

would exhibit a great deal of heat. But I raise this point only to alert us to the fact that an acute exacerbation of gout or sometimes the initial attack may occur during the first few days following an operation. If the initial operation was carried out for some infection, one might think of the inflamed joint as infected. Unfortunately, these joints may be occasionally opened with the diagnosis of gouty arthritis unsuspected.

Then finally, as we get to the recurrent ulcers and the changes in the toes, one wonders about the causes of vascular thromboses and whether we are dealing with a thrombotic diathesis on the basis of some systemic disease or perhaps with thrombotic thrombocytopenic purpura.

Diarrhea

Another point I noted is the diarrhea. When she returned in 1958 she was readmitted because of one week of severe diarrhea. She was not on steroid therapy at that time but subsequently was started with relief. There are not too many conditions of the bowel which might respond to steroids even temporarily. One would be ulcerative colitis, another might be some widespread vascular disease. In any case, the bowel condition was not worse while she was on massive steroid therapy; instead, there was some associated improvement.

Then finally we have an intestinal perforation. This raises the point as to whether the steroid therapy was a factor in the perforation. One would assume that if the perforation were in the stomach or upper part of the duodenum, it might have some relationship to the steroid therapy. If it occurred further down the bowel, it was presumably due to the underlying process for which the steroid was given. At all events, steroids would certainly be expected to modify the critical symptoms of this patient in the immediate period after the perforation occurred. It will be interesting to have comments from the other discussors on specific aspects of the joint involvement, vascular changes and the recurrent ulcers.

Vasculitis

DR. THEODORE B. BAYLES:

I thought we might like to review briefly the problem of vasculitis in rheumatoid arthritis. Very little is known about it. I have several references on the board which I thought might be useful. The paper by Baggenstoss and Rosenberg (Arch. Path. *35:* 503, 1943) is in the pre-steroid era and that of Sokoloff and Bunim (J. Chron. Dis *5:* 668, 1957) is from the period after steroids had appeared. These latter authors point out that within the last four years there are some 20 papers on vascular lesions in rheumatoid arthritis. There were practically none prior to steroid therapy. I also want to note one other reference concerning

peripheral vascular obstruction by Bywaters (Ann. Rheum. Dis. *16:* 84, 1957) in which he records 10 cases; but only 4 out of the 10 had received steroids. Also related is the problem of neuritis or neuropathy associated with rheumatoid arthritis. Here are two appropriate references. (Robinson, W. D., French, A. J., and Duff, I. F., Ann. Rheum. Dis. *12:* 323, 1953) and (Irby et al., Arth. and Rheum. *1:* 44, 1958).

We feel that vasculitis is not such a rare occurrence. Unfortunately, rheumatoid arthritis had not been carefully studied until the last 20 years, but it is interesting to note that Painter in 1901 remarked that he found arteritis in synovial tissue and suggested that the rest of the body should be studied. There were papers describing arteritis in 1908 and again in 1929, both from Germany. Around 1940 people finally became interested in the systemic aspects of rheumatoid arthritis. Nevertheless, earlier biopsy studies of muscles showed about 10% of patients had arteritis. I think the general consensus is that this is not a new or steroid-induced disease, but that the disease may be made more severe by steroids.

Latex agglutination

Dr. Dammin has asked me to discuss briefly the latex agglutination test. We recently reported our experience with this procedure in the *New England Journal of Medicine* (Hall, A. P., Mednis, A. D., and Bayles, T. B. N. Eng. J. Med. *258:* 731, 1958). It has been known for many years that serum of patients with rheumatoid arthritis will agglutinate particulate matter such as collodion particles, streptococci, pneumococci, etc. In 1940, Waaler showed that sensitized sheep cells would be agglutinated more readily by rheumatoid serum and since then there have been many modifications of this procedure. This technique has resulted in a 60% to 75% accuracy for patients with rheumatoid arthritis, and somebody has pointed out that this is about the same as our clinical judgment; so these tests have not been too helpful in the past. Dr. Ziff (Ziff, M., Brown, P., Badin, J., and McEwen, C., Bull. Rheumat. Dis. *5:* 75, 1954) of New York University recently introduced a third and final step which we have used at the Robert Breck Brigham. This step involves the agglutination of latex particles by a known positive serum or fraction thereof. Since normal sera contain inhibiting factors to this reaction, the expected agglutination will be impeded by normal serum. However, sera or the euglobulin fraction of the sera from patients with low titers of rheumatoid factor contain no inhibiting factor since it has theoretically been removed by their own rheumatoid factor. Thus, this serum does not inhibit the known reaction. This procedure is positive in about 98% of patients with rheumatoid arthritis and about 3% to 7% of

controls. It is particularly useful in the separation of gout, rheumatic fever and osteo-arthritis from rheumatoid arthritis. It does not help to differentiate rheumatoid arthritis from the other so-called connective tissue diseases such as lupus, periarteritis or scleroderma.

I was interested to hear Dr. Thorn mention malignancy in the differential diagnosis. We have seen underlying malignancy in cases with rheumatoid arthritis several times. A recent abstract (Grace, J. T., Dao, T. L. Clin. Research *6:* 302, 1958) has pointed out a case of dermatomyositis showing sensitivity to a tumor. The dermatomyositis was relieved when the tumor was removed and returned when metastases were noted. This is the first time any real sensitization to a tumor has been described.

Arteritis

To recapitulate, arteritis has certainly been present in patients with rheumatoid arthritis without and prior to steroid therapy; however, the arteritis is probably potentiated or activated by the steroids in certain patients.

DR. J. SYDNEY STILLMAN, JR.: I think Dr. Bayles has covered the problem of vasculitis quite well. I would like to add a few points. Kemper and Slocumb (Kemper, J. W., Baggenstoss, A. H., and Slocumb, C. H., Ann. Int. Med. *46:* 831, 1957) at the Mayo Clinic reviewed three groups of about 150 patients each. One group was composed of patients prior to the steroid era, one group was treated with cortisone without clinical hypercorticism, and a third group received large doses of adrenal cortical steroids with definite hypercorticism. Only in the last group was arteritis found. I think that our experience around Boston has been that arteritis existed in rheumatoid arthritis prior to steroids but I agree that cortisone seems to have aggravated the problem rather than have caused it. A large proportion of the cases that develop arteritis do so while the steroids are being withdrawn, or shortly after their withdrawal. This is not uniformly true but is frequently seen. Slocumb and Kemper reported that their cases were in a period of relative "withdrawal" since they were exposed to considerable extra stress.

I am interested that there was a transient, generalized, erythematous, circinate rash in this patient. We have seen a similar lesion in a patient with rheumatoid arthritis who also developed leg ulcers. The involvement of the gut is something I have been interested in. I have seen several people who have had fatal gastrointestinal hemorrhages, not from the usual sites in the stomach or duodenum, but from the ileum. One of them also had simultaneous bleeding from the stomach and the ileum in areas of arteritis. There have been several patients who have had perforations in the gut in vari-

ous places secondary to arterial involvement. As to the relationship of cortisone to the precipitation of these lesions, I wonder if the healing mechanism of the arteritic lesion leads to thrombosis and obliteration of the artery followed by tissue anoxia and finally perforation.

Steroids

DR. THORN: May I comment for a minute? There doesn't seem to be much doubt that the vascular lesions may be aggravated by either steroid therapy or its manipulation. It also seems pretty evident that the majority of patients in the future who have vascular lesions with rheumatoid arthritis are likely to receive steroids because they will represent the difficult cases to treat effectively with nonspecific therapy.

DR. EDWARD A. EDWARDS: I saw this patient on several occasions in the earlier part of her course. I would like to comment first on the matter of cancer. This had not entered my mind, but I do recall that in a group of patients with migratory thrombophlebitis due to carcinoma there was one patient who also had periarteritis nodosa and another patient who had what I considered some sort of hyperergic response in the leg simultaneous with the onset of thrombophlebitis. In the literature on rheumatoid arthritis there are many references to visceral arteritis, arteritis involving vessels of the thorax and abdomen and particularly the pulmonary and coronary arteries. We know little about the periphery because of the limited number of autopsies which are complete. Some varieties of arteritis have nothing to do with cortisone. In 1950 (Edwards, E. A., New Eng. Jour. Med. *243:* 290, 1950) I recorded a group of seven women and one man; six of these had a Buerger's-like disease with some sort of rheumatoid or rheumatic disorder.

Certainly, peripheral vasculitis occurred prior to the steroid era. I think none of the patient's I reported had received cortisone. I don't know whether or not the ulcers brought up the question of arteritis in my mind; one could not exclude arteritis as a cause of these ulcers. On the other hand, any patient who is bed-ridden and nutritionally under par can have multiple areas of infection, particularly in the lower extremities. I don't think one can differentiate except by biopsy, and even then the vessel reaction in the presence of infection may be hard to separate from a primary vasculitis. We'll see what Dr. Dammin has to say about this.

Spasm

The first definite vascular abnormality she showed was the appearance of blue toes several days after having an operation on her wrists. This raised the question of whether vessel spasm can produce such a picture. She had excellent peripheral pulses and maintained them up to the time of her death. Years ago

Raynaud said that if the cyanosis were symmetrical, it was always due to spasm. It remained for Hutchinson, about 1890, and for Lewis and Pickering, in the early part of this century, to obtain some biopsy and autopsy material which proved that this thesis was wrong. Ischemia which progresses to ulceration almost invariably has some sort of thrombosis in either the small or large arteries or arterioles. This patient, as soon as she developed sufficient ischemia in one extremity to interfere with the viability of her toes, must have had some thrombotic disease. I have been following a group of such patients for as long as 15 years. They fall into a pattern with recurrent waves of cyanosis, often with ulceration, and then spontaneous disappearance of these symptoms followed by a recurrence. I was not sure whether I was dealing with a specific disease entity or with a group of diseases with a common symptom. I have described this group under the title of remitting necrotizing acrocyanosis. I made this diagnosis in this patient, bearing in mind, however, that I am not sure whether this diagnosis is a specific pathological entity. It simply means that there is thrombosis of terminal vessels.

DR. GUSTAVE J. DAMMIN: Now, before we have the autopsy findings, we might see what implications about this group of diseases arise from recent experimental work on the metabolism of foreign proteins in the experimental animal. The suspicion is growing that we are dealing in some of these diseases, specifically rheumatoid arthritis and systemic lupus erythematosus, with a variety of autoantibody directed against tissue components which thus far have not been identified definitely.

Antigen catabolism

When one labels rabbit gamma globulin with iodine^{131} and then returns the labeled protein intravenously to the rabbit, there is a two-phased pattern of elimination of the labeled protein from the peripheral blood. If on the other hand one labels a serum fraction from bovine serum the pattern differs. Depending on the fraction used, there is, after a period of catabolism resembling that for homologous gamma globulin, a rapid disappearance which has been identified as the first manifestation of an immune response. If bovine serum gamma globulin is used, at the fourth day there begins a more rapid catabolism of this protein and by the end of the seventh day no antigen is detectable in the peripheral blood by currently used methods. The phase of antigen catabolism that interests us most is this third or "rapid" phase because it is during this period that one identifies the first tissue reactions related to the immune response. If we determine the rate of disappearance of the labeled protein antigen from the tissues we find

that it parallels the disappearance from the peripheral blood. In other words, there is no specific localization of the antigen in any of the tissues. The type of acute arteritis one observes during the period of rapid catabolism of antigen resembles that seen in periarteritis nodosa, in some cases of systemic lupus erythematosus and rheumatoid arthritis and occasionally in other examples of the so-called collagen diseases.

What can we say about the specificity of acute arterial lesions of this type. In the rabbit as the experimental animal, one can demonstrate that vascular lesions contain rabbit gamma globulin and it is possible to demonstrate also that antigen is present in the lesion at the time it appears but not before. Acute arterial lesions occur in a wide variety of apparently unrelated states and we must therefore interpret with great care the implications which any particular lesion carries.

For example, in cases of idiopathic or primary pulmonary hypertension, in which we have no reason to suspect an antigen-antibody process, acute arterial lesions resembling those in periarteritis nodosa are observed in the pulmonary arteries.

On the basis of experimental work involving an anastamosis between systemic and pulmonary arteries, one can say that a major factor in the development of the acute arterial lesion is a response to an increased arterial pressure. In the smaller pulmonary arteries, which are the ones involved in pulmonary arterial hypertension, one would suspect that aneurysm formation would be a sequela of the process. We have, indeed, observed a rather unusual end result which is related to a disruption of the elastica producing a sinusoid-like circulation around the involved pulmonary artery. These arterial lesions resemble periarteritis nodosa and therefore should be comparable to those we suspect of being present in today's case.

DR. THORN: Is there any evidence of thrombocytopenia in the record?

RESIDENT: No, she had normal platelet counts.

DR. DAMMIN: During October of 1957 when she had this skin reaction with erythema, did she have much of a systemic reaction? Did she have fever or leucocytosis?

RESIDENT: No.

Autopsy findings

There was fibrinopurulent exudate on the serosal surfaces and there was focal fat necrosis in the mesentery and omentum. In the jejunum, we found a recent perforation which was distal to the anastamosis performed during the last operation before the patient's demise. It is apparent from the thinness of the wall that there was no previous reaction at this site of perforation. Not only were there several portions of the jejunum involved with an inflammatory process with ulceration, but similar lesions were observed in the distal ileum and also the ascend-

Figure 1. Gangrene of the toes.

ing colon. It is apparent also from gross examination that any of these lesions might well have perforated since we can recognize a destructive process extending well into the muscularis.

Gangrene of the extremities was observed and had the distribution which Dr. Edwards showed you in the photographs (see Figure 1).

In the heart, which was not enlarged, we recognized a myocardial infarct. There was fatty metamorphosis of the liver with some enlargement (1900 gm). The kidneys were normal in size and had no gross or microscopic involvement of the vessels or the glomeruli. The spleen was normal in size, was congested but presented no gross or microscopic lesions. The adrenals together weighed 10.5 gms.

For the microscopic review, we might begin with examination of the tendon which was removed surgically at the operation described. The rheumatoid lesion was a very active one with large areas of necrosis resembling the caseation of tuberculosis. At the periphery of the necrotic areas one can recognize numerous giant cells and epithelioid cells. No microorganisms were seen microscopically. In one of the sections, complete dissolution of the central necrotic portion was observed. The appearance of the sternoclavicular joint was characteristic of an active rheumatoid process (see Figure 2). There was marked cellularity of the synovial tissues with fibrinoid deposits near the surface.

Of the tissues examined from the intestine, it is apparent that there are processes other than vascular occlusion which account for the lesions. In the segment of jejunum removed at operation, no vascular lesions were found which could account for the extent of the ulceration of the mucosa, the edema of the submucosa or for the perforation. Likewise, in the postmortem speci-

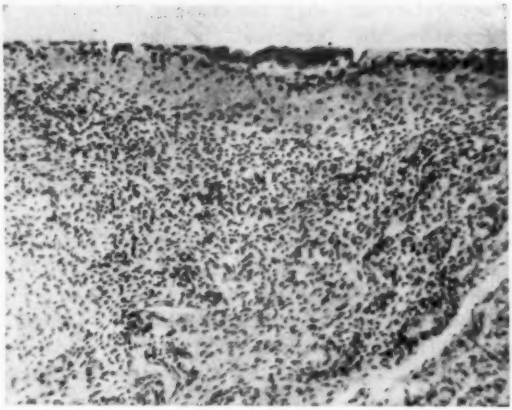


Figure 2. Synovia of sternoclavicular joint. Fibrinoid is present on the surface and there is extensive subjacent mononuclear cell infiltration.

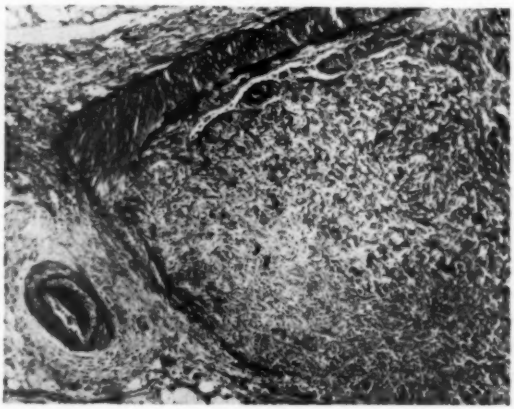


Figure 3. Coronary artery. The wall is intact in the upper portion of the field, but in the lower there is almost complete loss of all elements of the wall with thrombus occluding the lumen. In the lower left field, there is intimal thickening in a small artery with partial occlusion by thrombus.

men there is not enough vascular involvement to account for the extensive inflammatory process observed in the intestine. In portions the edematous submucosa had a width 10 times the normal.

Thrombus

The coronary artery which supplied the area of myocardial infarction was a major branch of the left circumflex. The process was characterized by destruction of the elastica and the smooth muscle and an occlusion of the lumen by partially organized thrombus (Fig 3).

In adjacent vessels, probably as a result of propagation, one can see portions of partially organized thrombus. Other vessels show the same process of destruction of the media and thrombus formation, but they are smaller in size. Microscopically the infarct in the myocardium had features which suggested a duration of approximately 10 to 14 days. In one portion of the endocardium we note subjacent ischemic myocardial damage and on the surface the attachment of a mural thrombus. In the atrium there is an extensive acute endocardial process similar to that seen in the involved vessels and here also there is mural thrombus formation. In the dorsalis pedis artery there was destruction of the media and elastica with thrombus occluding the lumen in part. The type of destruction noted here suggests a primary process, this type of lesion not being the result of embolism. The portions supplied by the dorsalis pedis artery show the changes characteristic of gangrene. In other areas remote from this portion there is an arteritis involving the vessels in the deeper portion of the dermis. Several vessels therefore of the lower extremities were involved by a primary arteritis.

In the pancreas, the arteries showed a more chronic type of reaction with loss of the elastica. The skeletal muscle presented a diffuse interstitial myositis. In a section of a nerve, there was an arteritis similar to that observed in the myocardium and lower extremities.

In summary therefore in this patient with extensive rheumatoid arthritis there is also widespread vascular involvement with lesions showing the characteristics of periarteritis nodosa, involving particularly the heart, the intestinal tract, the extremities and the peripheral nerves. It was not possible, however, to ascribe all of the intestinal lesions to the arteritis.

DR. EDWARDS: Did the vessels in the base of the ulcerations of the foot show any pathological changes?

DR. DAMMIN: One of the sections shown represented gangrene due to arteritis with secondary thromboses of the vessels in the base of one of these ulcerations.

DR. THORN: Can one differentiate between disseminated lupus with a rheumatoid-like syndrome and rheumatoid arthritis with vasculitis by

the presence or absence of leucocytosis?

DR. STILLMAN: To add to the confusion, we now have a patient in the hospital who has had clinical rheumatoid arthritis for three or four years. Diagnosis was made by biopsy. She also had a positive latex test. Originally, she had two negative L.E. cell preparations. Her systemic illness gradually increased and she had a lowering of her white count. Subsequently, the L.E. cell preparation became positive. She returned home for a while but later came back because of marked weakness in her hands, and a biopsy of an apparently uninvolved gastrocnemius showed dermatomyositis. I am sure that if we looked hard enough we could have also made the diagnosis of polyarteritis nodosa. I have often wondered when the L.E. cell test was of real significance. When the patient has skin and renal lesions in addition to leucopenia one can favor lupus, but most patients fall somewhere in the middle and I don't think it is possible to define which disease they have.

DR. THORN: It is remarkable that our patient's kidneys were spared.

DR. DAMMIN: Yes. I also think that it is worth repeating that the arteries of peripheral nerves, the G.I. tract and the heart are particularly involved when arteritis complicates rheumatoid arthritis. The kidneys, which are so often involved in lupus or periarteritis nodosa, were not involved here nor in the other reported cases (Ball, J.: Rheumatoid Arthritis and Polyarteritis Nodosa, *Ann. Rheumatic Dis., 13:* 277, 1954).

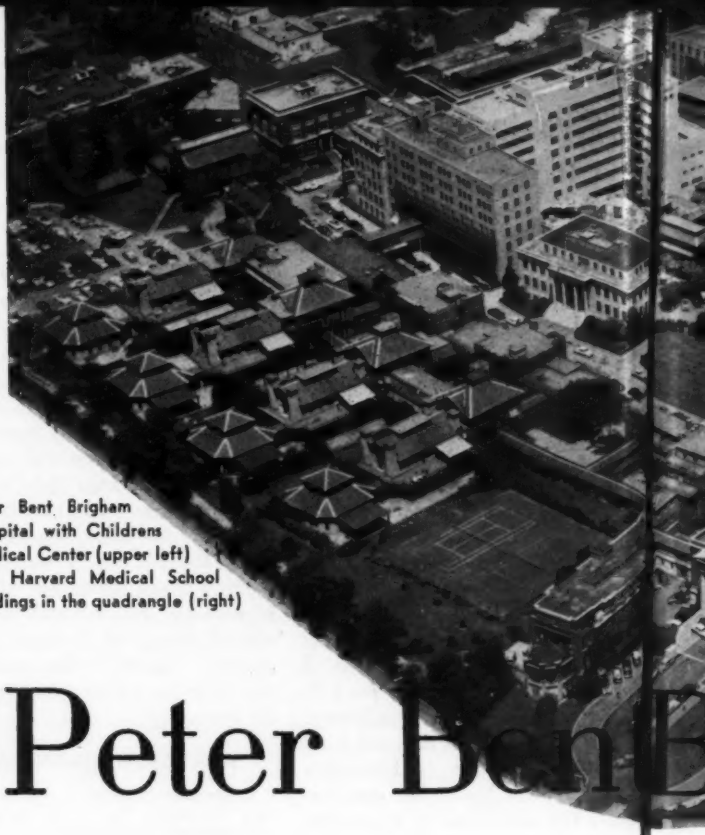
DR. EDWARDS: Now that we have talked about this patient, should we have treated her in another way? She received high doses of steroids. Was this good or bad?

DR. THORN: We had no other therapy available. May I ask another question? We have always been interested in the association of myocardial disease with rheumatoid arthritis. Could the "myocardial injury" noted in the literature be due to rheumatoid vasculitis?

DR. DAMMIN: Here we have an arteritis which resembles classical periarteritis nodosa and not the arterial lesion of rheumatic heart disease. Aschoff bodies were not seen here nor reported in other similar cases.

ANATOMIC DIAGNOSES

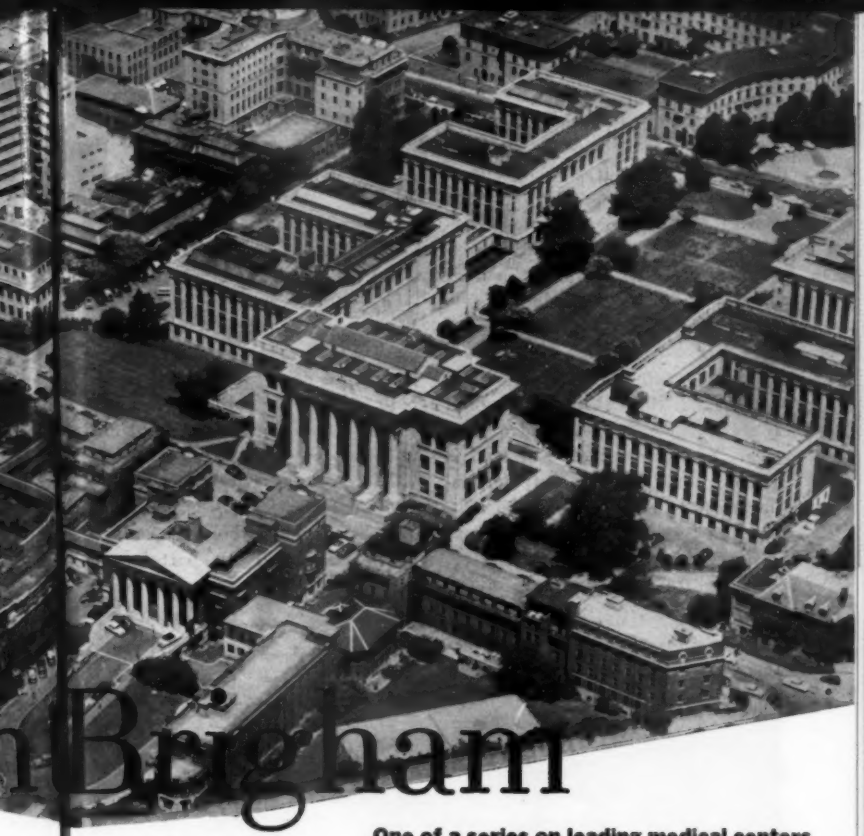
1. Rheumatoid arthritis involving multiple peripheral joints with deformities and subluxations of hands.
2. Periarteritis nodosa, predominantly of small arteries, with partially-organized thrombi involving heart, lower extremities, bowel, pancreas, adrenal and peripheral nerves.
3. Gangrene of toes of right foot and gangrenous ulcers of both feet.
4. Focal necroses of myocardium, recent and organizing.
5. Focal endocarditis, active, with fibrin deposition.
6. Focal necroses of small bowel and large bowel with recent free perforation of proximal jejunum.
7. Generalized organizing purulent peritonitis with 1000 ml. of sanguineo-purulent fluid.



Peter Bent Brigham Hospital with Childrens Medical Center (upper left) and Harvard Medical School buildings in the quadrangle (right)

Peter B

Affiliated with Harvard Medical School, Boston's "Peter Bent," a 289 bed general hospital, offers board approved training in internal medicine, surgery, urology, anesthesiology, radiology and pathology, maintains an outstanding autopsy rate of 80%.



n Brigham

One of a series on leading medical centers

Peter Bent Brigham Hospital is a 289 bed adult general hospital located in Boston adjacent to the Harvard Medical School, the Harvard School of Public Health, the Children's Medical Center and the Boston Lying-In Hospital.

It was named after a Boston merchant who bequeathed money to build a hospital "for the care of sick persons in indigent circumstances in the county of Suffolk." Brigham's executors believed that his purpose could best be accomplished by associating the institution with the

Harvard Medical School, an affiliation which dates back to the hospital's opening in 1913.

In the residency program at Peter Bent the young house officer is supervised by a medically mature resident group often far along in their specialty training and able to give full-time attention to the training of their junior colleagues while broadening their own experience.

Emphasis throughout the hospital is on individual growth and expression. To this end the house staff is given optimal responsibility for patients on the ward services, the visiting staff serving in a consulting and advisory capacity.

There are 90 beds each on the general medical and surgical services, approximately 80 beds in the private pavilion, and approximately 30 beds used for special research purposes including metabolic study, surgical investigation, neurosurgery and cardiac surgery.

An active outpatient department with some 35 different clinics had over 45,000 visits last year, and the emergency department, which serves both the City of Boston and the Town of Brookline, a total of 11,637 visits.

There are approximately 125 senior staff physicians, surgeons, radiologists and pathologists, all of whom have full or part-time appointments to the Harvard Medical

Members of house staff make ward rounds with senior physician.

Films are discussed by staff physicians in PBBH x-ray rounds room.

School faculty. In addition there are more than 120 clinical fellows attached to the hospital's teaching and research units. Their fields of study include biophysics, metabolism and endocrinology, nephrology, hematology, cardiology, gastro-enterology, psychiatry, experimental surgery, neurology, pharmacology, bacteriology, anesthesiology, and pulmonary physiology.

The hospital offers board training in internal medicine, surgery, urology, anesthesiology, radiology and pathology. Accreditation in orthopedics and neurosurgery is offered in cooperation with the Children's Medical Center.

Conferences

Formal teaching conferences follow a weekly schedule and include clinico-pathological, radiological, medical, surgical, neurological, thoracic, peripheral vascular, diabetic and tumor conferences in addition to staff grand rounds. Current topics of medical interest are discussed at the weekly medical service tea and each year a course in electrocardiography is offered to which all are invited.

Each year the hospital welcomes a physician- and a surgeon-in-chief *pro tempore*, each assuming the duties of the respective chiefs for one week, living in residence with the house staff and conducting ward rounds, clinico-pathological conference and special lectures. This practice had its initiation in Boston in November 1913 with the visit of Dr. William S. Thayer of Baltimore as physician-in-chief *pro tempore*. The roster of distinguished visitors includes leaders in medicine and surgery throughout the world.

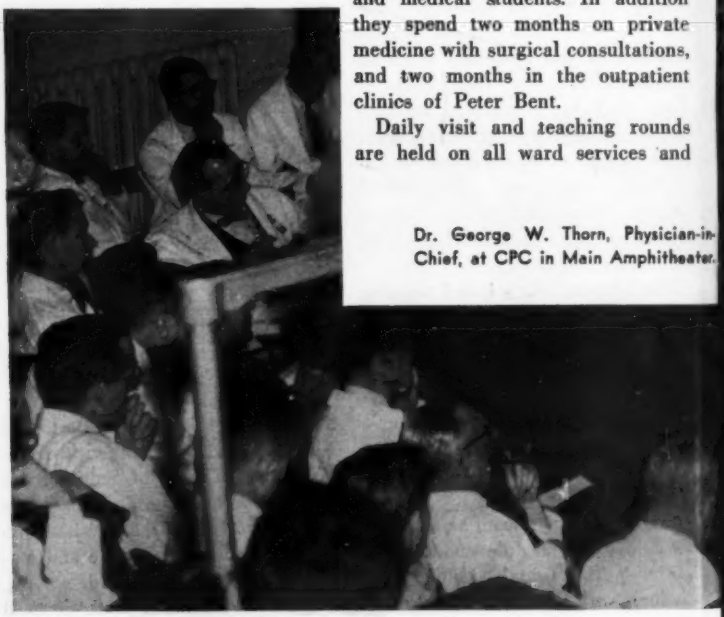
The medical house staff, directed

by Dr. George W. Thorn, consists of 13 house officers, 12 assistant residents, 6 senior residents, and a chief resident physician. House officers have 24 weeks of general ward duty, 8 weeks of private duty, 8 weeks of outpatient and emergency ward duty, 4 weeks of metabolic-renal service, and 4 weeks of rheumatology at the Robert Breck Brigham Hospital (named after Peter Bent's cousin). In addition there is a two week holiday and two week reading period.

Assistant residents have two months of ward duty, two months of outpatient experience and one month in the cardiology clinic at Peter Bent. In addition, each assistant resident has two months of diabetic training at the New England Deaconess Hospital-Joslin Clinic, one month of medical obstetrical experience at the Boston Lying-In Hospital, and four months of general ward duty at the West Roxbury VA Hospital.

Senior residents spend 4 months on the wards of Peter Bent and 4 months on the wards of the West Roxbury VA Hospital. During this period they are responsible for the operation of the ward service as well as the teaching of house officers and medical students. In addition they spend two months on private medicine with surgical consultations, and two months in the outpatient clinics of Peter Bent.

Daily visit and teaching rounds are held on all ward services and



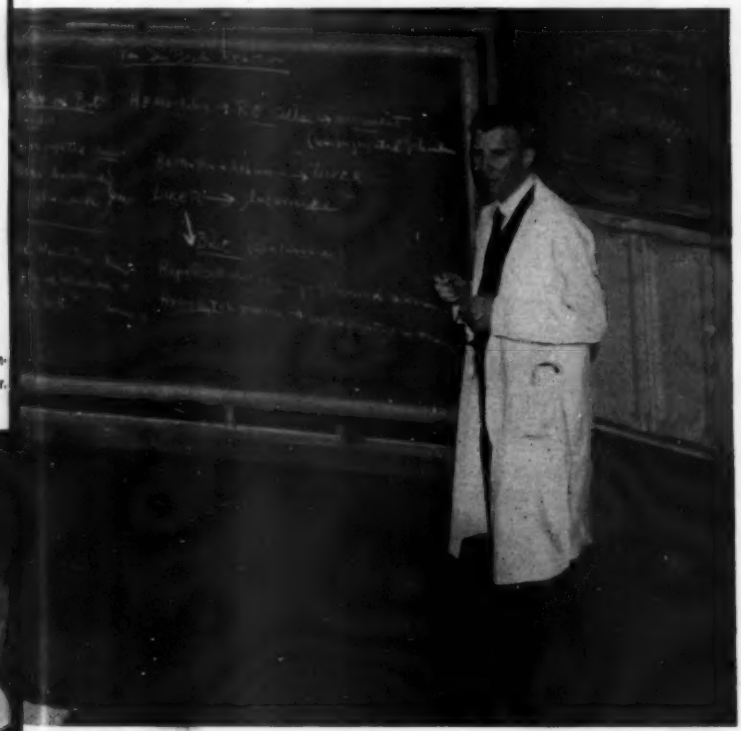
Dr. George W. Thorn, Physician-in-Chief, at CPC in Main Amphitheater.

special teaching rounds in biophysics and psychiatry are held weekly. The physician-in-chief and other senior physicians make regular rounds on the private service. The outpatient clinics include all of the regular medical specialties as well as special facilities for the care of chronic alcoholics, luetics, and the aged.

Surgical

The surgical house staff consists at the present time of 6 house officers, 12 junior assistant residents and 8 senior assistant residents; a resident in general surgery who is also the Arthur Tracy Cabot teaching fellow, a resident in urological surgery, a resident in neurosurgery, a resident in anesthesia and a resident in orthopedic surgery. Dr. Francis D. Moore is surgeon-in-chief.

The team system is used throughout the surgical service which, be-



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Streptococcal infections: Streptococcal pneumonia, erysipelas, tonsilitis, otitis media, infections of traumatic and surgical wounds, urinary-tract infections.

Pneumococcal infections: Lobar pneumonia, bronchial pneumonia.

Haemophilus influenzae infections: Pneumonia.

Supplied: Capsules, 125 mg. (gray and yellow) and 250 mg. (black and yellow), vials of 36. Oral Suspension (cherry-raspberry flavored), 125 mg. per 5 cc. teaspoonful, bottles of 2 fl. oz. Also available: Oleandomycin Phosphate, Wyeth, for intravenous administration—as a dry powder for reconstitution; each vial contains 500 mg. of oleandomycin base as the phosphate salt.

Wyeth

Philadelphia 1, Pa.

*Trademark

PETER BENT BRIGHAM HOSPITAL

INPATIENT		
No. of Patients Treated		6,600
Medical	3,160	
Surgical	3,440	
No. of Patient Days		83,071
No. of Admissions		6,385
Average Patient Stay		13 days
OUTPATIENT		
Total Visits		45,624
Medical	26,942	
Surgical	18,682	
EMERGENCY DEPT.		
Total Visits		11,637
Medical	3,764	
Surgical	7,873	
RADIOLOGY		
Total Patient Visits		24,491
X-ray Treatments		1,498
Films Taken		87,259
PATHOLOGY		
Autopsies Performed		379
% of Autopsies		80%
Total Surgicals		3,207

cause of its vertical organization, provides a graded educational experience for its house staff members. There are teams in general surgery (three: ward, surgeon-in-chief, private), orthopedics, urology, neurosurgery and otolaryngology, thoracic surgery, and anesthesia. Teams consist of junior and senior house staff members in appropriate number as well as affiliated visiting surgeons in each of the surgical specialities.

Members operate together, round together and share responsibilities for patient care in unison. Fourth year medical students are assigned as clerks to each of the teams. Training in gynecological and peripheral vascular surgery is provided in the general surgical rotation. An active outpatient and emergency ward provides the opportunity for the treatment of non-hospitalized patients.

Affiliations

The surgical service maintains an affiliation with the West Roxbury VA Hospital, the Children's Medical Center, the Burbank Hospital in Fitchburg, and St. Mary's Hospital in London, England. The resident staff of the first two is selected in conjunction with Peter Bent Brigham Hospital.

The training program in surgery is flexible and tailored to meet the needs and desires of the individual. Most members of the house staff take training in experimental surgery and laboratory methods either in the surgical laboratories of the hospital or in one of the outside centers.

PETER BENT BRIGHAM RESIDENCIES

SERVICE	CHIEF OF SERVICE	TOTAL RESIDENCIES	LENGTH OF PROGRAM (YEARS)
Medicine	George W. Thorn Thomas A. Warthin*	18	2
Surgery	Francis D. Moore Richard Warren	4	4
Anesthesiology	Leroy D. Vandam	2	2
Neurosurgery	Franc D. Ingraham	2	2
Orthopedics	William T. Green	1	2
Urology	J. Hartwell Harrison	1	3
Pathology	Gustave J. Dammin	9**	3 or 4
Radiology	James B. Dealy, Jr.	12	3

* West Roxbury Veterans Administration Hospital
** Includes two at West Roxbury

Specialty training in anesthesia, urological, neurological, and orthopedic surgery also is offered, the latter two in conjunction with the Children's Medical Center.

In addition to the hospital conferences, members of the surgical service attend surgeon-in-chief rounds, history meetings, and pathological conferences. Emphasis is on careful diagnosis, pre- and postoperative care, as well as the technical aspects of operative surgery.

Radiology

The radiology house staff quota consists of 6 junior assistant residents, 4 senior assistant residents, one resident and one chief resident. The fully accredited program, conducted jointly with Dr. Edward B. D. Neuhauser's department at the Children's Medical Center, comprises training in all phases of diagnostic

ANNUAL STIPENDS

	SURGERY	MEDICINE	RADIOLOGY	PATHOLOGY
Interns	$ 300	$ 300	——	——
1st Year Residents	500	1,000	$ 500	$ 500
2nd Year Residents	500	1,500	750	750
3rd Year Residents	750	——	2,000	2,000
4th Year Residents	750	——	——	——

Dr. Joseph Shipp, chief resident, and other house officers make medical rounds.

and therapeutic radiology, and is actively linked to clinical medicine.

Over and above the radiology training at Peter Bent, residents rotate through the hospital's Department of Pathology and through the radiology departments of the Children's Medical Center and the Massachusetts State Cancer Hospital at Pondville. Research affiliations with the other services of the hospital and the Harvard Medical School are maintained.

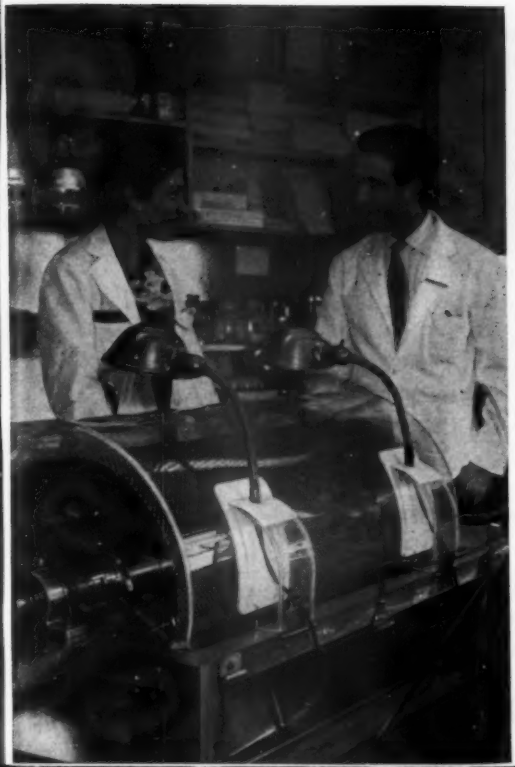
An x-ray conference is held weekly and all residents actively participate in the many other regularly-scheduled clinical and pathological conferences. Daily afternoon work conferences for the radiology house staff are conducted by its chief, Dr. James B. Dealy, Jr.

The diagnostic service has its modern technical apparatus, including image intensification equipment, in a recently completed pavilion. The therapy service anticipates, in the near future, the addition of a cobalt 60 unit to its 250 deep therapy machine.

Last year 87,259 films were taken in doing 28,334 examinations on 24,491 patients. A total of 1498 x-ray treatments were given during the same period.

Pathology

Dr. Gustave J. Dammin is pathologist-in-chief. The pathology house staff consists of 7 residents in pathological anatomy and two residents in clinical pathology. Two senior residents, one supported as a clinical trainee of the National Institutes of Health, supervise the house staff activities. Residents at all levels of training participate in autopsy and



Resident fellows discuss operation of artificial kidney. Below, Morning staff conference of medical residents and chief.

Pathology residents and chief study single specimen with the aid of Scopicon.

surgical cases. There were approximately 380 autopsies (80% of deaths) and 3000 surgical specimens examined last year.

Residents rotate through the West Roxbury VA Hospital and the Free Hospital for Women; a rotation through the Children's Medical Center and the Boston Lying-In Hospital is included in the training program.

Residents in clinical pathology participate in the activities of all the hospital clinical laboratories including bacteriology, chemistry, hematology, the blood bank, the kidney laboratory and others.

The resident staff participates in daily surgical pathology conferences and weekly gross and microscopic autopsy conferences with the senior staff, as well as the medical and surgical pathology conferences.

Research

Opportunities for full or part-time research activities are available in the Pathology Department of Peter Bent, Harvard Medical School, and in other departments for work in such fields as immunology, biophysics, cardiac physiology and organ transplantation. This phase of the residency training program has just received additional support from the National Heart Institute of the Public Health Service.

The hospital maintains a three year nursing school which graduates

Coffee cups have been emptied but the discussion goes on re an interesting case.

between 40 and 50 nurses annually. In addition approximately 12 dietetic interns are in service. There are active social service and physical therapy departments.

Maintenance is provided for the house staff in quarters above the administrative building. Both the Harvard Medical School library and small surgical and medical libraries on the respective services in the hospital are available.

Recreation

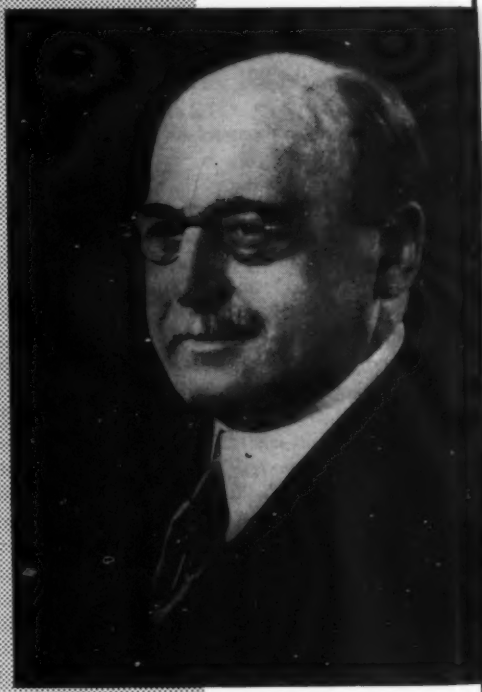
Beyond the medical activities, Boston provides ample opportunity for amusement and recreation. A wealth of museums and galleries are near at hand, and often members of the resident staff have theater parties to view pre-Broadway shows. Boston Symphony Orchestra concerts are an added attraction, and each spring, the Friends of Peter Bent Brigham Hospital sponsor a benefit "Brigham Night at the Pops."

In May of each year the medical house staff challenges its surgical counterpart to a softball game. Both squash and tennis courts are available at the hospital, and in connection with the latter an annual tennis cup is awarded to the winner of the Peter Bent Brigham-Massachusetts General Hospital tournament.

In addition, there is an annual Brigham house staff dance sponsored by the senior staff.

E. Mead Johnson's Mission

FEEDING BABIES



MEN WHO MADE THE MEDICINE

His career did not follow a set pattern.
As a lawyer he had only one case.
And as a businessman he bucked the
patent-medicine trend of his day,
insisting that his infant dietary product
be promoted through the profession only.

ES BETTER

Today's mother who finds herself with an infant feeding problem knows where to get help—from her pediatrician.

But it wasn't that simple around the turn of the century. Then many a distraught mother, not knowing where to turn, accepted the advice of her grocer or a self-styled neighborhood expert. She was lucky if the mixture of misinformation didn't make her baby worse.

Edward Mead Johnson gave the problem much thought and arrived at these conclusions: "not all babies are alike" and "physicians' babies are better babies." These two truisms—the need for an individual formula for each baby and the necessity of the physician prescribing the formula—became his guides when he marketed a dietary product for infants.

Johnson had no medical training but was, in fact, a lawyer. Above all, he was a practical and observant man. Thus he was able to gain an insight into infant feeding problems because of experiences within his own family.

He was a farmer's son, born in 1852 on the outskirts of a village near Carbondale, Pa. He taught a year of country school, then took a job with the engineer crew of an anthracite mining company in the vicinity, and saved enough to pay his way through the law school of the University of Michigan.

On graduating in 1875 he returned East to practice. He had handled just one case—here the muse of history nods and fails to record the Robert beckoned him to quit law for business.

The particular field of business was medical supplies. Robert Wood outcome—when his older brother

Johnson had served an apprenticeship in pharmacy at a cousin's drugstore and set himself up as a drug broker in New York; after devising an improved process for making plasters, he entered into a partnership, Seabury & Johnson, in that city. Robert hired Mead to help on sales. As sales grew, Robert hired another brother, James—not a lawyer, but a mechanical engineer—to run the factory. The association of the three energetic brothers continued in this fashion until 1885.

Mead was 33, a prospective bridegroom. He wanted greater opportunity for advancement. James too was restive; swept by the prevailing tide of medical enthusiasm for Listerism, he had ideas for developing special machinery necessary to produce aseptic dressings. Robert not only shared their ambitions, but had a strong drive of his own. All three left Seabury & Johnson.

Partners

Mead and James formed Johnson & Johnson in December 1885. Half a year later they had a plant going in New Brunswick, N. J., with Mead managing the business end in New York. In a few months Robert, having settled accounts with Seabury, was free to join his brothers.

The new firm prospered by filling a need, by maintaining high standards of quality, and thereby earning the confidence of the profession. It clearly mirrored the traits of the founders. Besides medicated plasters and surgical dressings, J & J produced adhesive tapes, ligatures and sutures, soaps, disinfectants and baby powder.

E. Mead Johnson looked with favor on the addition of a line of pharmaceuticals, perhaps more so than Robert and James, and he instigated the formation of subsidiary companies to produce and promote them. He was particularly interested in papain digestants. These ferments from papaya juice were reported on in the journals by a J & J staff member, Dr. Frederick B. Kilmer, father of the poet, Joyce Kilmer.

Despite the steady growth of the New Brunswick company in the course of a dozen years, Mead Johnson decided to strike out on his own. Literally, not flippantly, he took a powder—papain—in a friendly arrangement with his brothers. In 1897, he sold his financial interest back to the company and put his energies into a previously affiliated firm, the American Ferment Company, which was making the digestants under the trade mark Caroid. From a rented building in Jersey City he carried on an enterprise that must have seemed strange to many businessmen in that heyday of patent medicines. It was ethical.

Mead Johnson's policy was to pro-

Mead Johnson Jr. left another job help his dad with sales promotion.

Lambert, Johnson's second son, successfully formulated new food for infants.

mote his products exclusively to physicians, using no consumer advertising and putting no dosage directions on the packages. Evidence of this determination survives. In an agreement with an Arkansas doctor who provided a method of making an inexpensive sugar-splitting ferment, it was stipulated that marketing would be done "only through channels recognized as ethical by the medical profession and drug trade." In an agreement with a European agent, the latter was pledged to "make no attempt to exploit such articles through channels reaching the public."

The minute books of the company (American Ferment Company was incorporated in 1900) echoed Mead Johnson's circumspection *vis-á-vis* stockholders. Capital stock had been increased to finance the production of a new line, pharmaceuticals, which in turn required larger manufacturing quarters. He constructed a building for this purpose, on his own account, and set what he considered a reasonable rent; but before committing the company, he felt that although he was the principal stockholder, he should consult the new stockholders.

The corporate name was no longer descriptive of the business. Ferments constituted the lesser part of its products. Toward the close of 1905 the name was changed to Mead Johnson & Company.

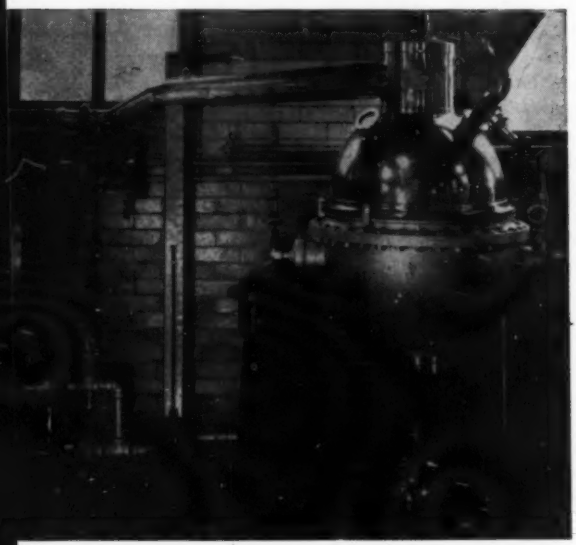
Like many early corporations, this was then essentially a family business, whose leadership was expected

to pass from one generation to another. Mead Johnson had three sons. He enjoyed vigorous health, but was cautious, and in case the unforeseen occurred he wanted at least one of his boys to have a knowledge of the business.

His eldest, "Ted" (Edward Mead, Jr.), had been a sickly baby and had a heart condition. Of the younger sons, Lambert and James, the latter was not yet in his teens. Lambert was therefore chosen and taken out of school—but not for long. Ted's health improved and he, too, became eligible. And in the ensuing years Ted became a detail man, and Lambert a chemistry student at Cornell University.

Formulas

In this period the general practitioner had little information to help him with the puzzle of infant feeding formulas, for the principles of modern scientific feeding were still evolving out of pediatric controversy. The company offered Dextrilactic Powder, a mixture of Caroid, other enzymes, and diastase. One day in 1911 Joe Quilligan, senior detail man, called in New York on Dr.



Original equipment used to produce the dextrin-maltose food for babies. This still was turning out 50 pounds a day before it became obsolete.

Jerome S. Leopold. This turned out to be a momentous visit.

Dr. Leopold, one of the few specialists in pediatrics in the United States at that time, was in charge of the milk station of the New York City Milk Committee. After interning at Mount Sinai Hospital he made a study tour of European centers and learned, particularly from Dr. Heinrich Finkelstein's clinic at the Berlin Infant Asylum, of experimental work showing that maltose-dextrin was superior to other sugars for milk mixtures.

Dr. Leopold's own experiments convinced him that equal parts of maltose and dextrin provided the proper carbohydrate addition to cow's milk. Back in this country he tried to interest manufacturers in making such a preparation. They didn't think it worthwhile. They were all using milk sugar or cane sugar, and they felt there would be no demand for the new thing. But Quilligan took Dr. Leopold's suggestion back to the home office.

Gruel

E. Mead Johnson listened carefully. His thoughts went back to the terrible time Ted had had as an infant in being unable to tolerate food until Dr. Abraham Jacobi was called in and prescribed dextrinized gruel added to the milk. Mead recalled that the gruel was made by boiling wheat flour, cooling, and stirring with malt extract. His thought was, if the preparation proposed by Dr. Leopold could be made on a production basis for a low selling price, though malt sugar was costly, and if the profession accepted it, the company would have an important new product.

Son Lambert, home for the Easter vacation from Cornell, where he was studying for a doctorate in chemistry, was asked by his father to stay in Jersey City and formulate the carbohydrate. He did. In a month he succeeded in converting potato starch (a German import) into dextrin and maltose by diastasic action, and a week later accumulated five pounds. From that point on, the rate was five pounds every three days.

As fast as a trayload could be removed from the oven and packed in cartons, the substance was delivered to Dr. Leopold and his colleagues for trial at the Babies Ward of the New York Post-Graduate Hospital. They took poorly developed infants off cane sugar and substituted the new preparation. Gains in weight resulted. They restored cane sugar, and the infants lost weight; again substituted the new preparation and again observed general improvement. Toward the end of 1911 clinical reports began to appear in the journals.

Faith

Here was the genesis of a preparation whose original form continues to this day. It was promoted only through the medical profession, and this policy, approved by the pediatric group at Post-Graduate Hospital, contributed largely to its success. A booklet, "Simplified Infant Feeding," was part of the campaign to reach physicians.

But it took time for the product to catch on. Without E. Mead Johnson's faith in it, it could not have gone far.

Lambert stayed on, supervising production and gradually raising output from 50 to 250 pounds a day by 1914. Ted traveled for the company in the South—it was in San Antonio he met the girl who was to be his wife—and that year he accepted a challenge from Johnson & Johnson to build up its suture department. He then divided his time between the two firms.

Ted's marriage to a southern belle was a case of following in his father's footsteps. His mother was the southern-born daughter of a French-

Old photo shows Mead Johnson booth at the AMA convention held in Atlantic City in 1912. This was the first technical exhibit of company's dietary products for infants.

man who had served in the Confederate Army before coming to New York to join the faculty of Columbia University. It was in New York that E. Mead Johnson met her, and as he was something of a gourmet, the notion of fried chicken plus the art of French cooking must have appealed to him.

The elder Johnson walked the two miles from his Jersey City home to his office to work off gastronomic excesses. On these walks he sometimes rehearsed conversations he would hold in the office and became so absorbed that he gesticulated on the way. Much was on his mind, both personal and business problems. His wife was seriously ill. The company required larger manufacturing capacity and cheaper fuel. War had broken out in Europe and the British blockade of Germany cut off the starch supply.

Midwest

For a domestic source of starch he decided on corn. He reached the decision also that the factory should be moved to the Midwest, where it would be close to the source and centralized for economical distribution of manufactured goods. In the spring of 1915 he set out to seek a site, having in view the largest space possible at the lowest cost. And he found it, an old cotton mill on 11 acres in Evansville, Ind., a city on the lower reaches of the Ohio River. It had dynamos for electric power and answered all the other requirements. The purchase price was $50,000—more cash than the company possessed.

It was a courageous move. E. Mead Johnson was 63, an age at which few men would take such a bold step. But he had confidence. It was also an expensive move. The dismantling of the Jersey City plant, the remodeling of the new one, and the purchase of additional machinery cost more than had been anticipated.

Lambert put the new premises in shape for production in May, 1916. He had attended to the incorporation of the business as an Indiana concern and was its secretary. Although Lambert was shy by nature, he was not long in becoming acclimated to Evansville, getting help in this respect from a local miss who later became his wife.

Ironically, the year of high hopes in the company's fresh beginning marked also the passing of Mrs. E. Mead Johnson, Sr.

Anxious time

The first few months of operation in Evansville were an anxious time. Expenses overshot sales. And when business picked up in 1917, additional capital was needed to finance the larger volume. Mead's brother

James in New Brunswick came through with a loan; Miss Helena Dalton, a long-time friend of his late wife, lent some of her savings from the dress shop she ran in New York.

Even so, the breach was not filled, and the company sold out its rights in Caroid and other ferment products to its Canadian agent, J. Howard Cummings, who revived the name, American Ferment Company. Increased overhead and the higher cost of raw materials incident to the war impelled E. Mead Johnson to propose at the January 1918 meeting of the board of directors that inasmuch as the company could not well afford to pay him his $10,000 salary as president, he would take a cut in half, retroactive to January 1917.

Thus they went through the war years, years of growing pains. Mead had Lambert at his side. His youngest son, James, was in France, having joined the LaFayette Escadrille after completing an arts course at Cornell. The war over, James chose to remain in Paris and married there.

Business troubles, however, were not over. Bonds held by a bank as payment for real estate were in default, and in 1920 foreclosure threatened. It was only a matter of $20,000 but the sum was not easy to raise. The help of friends and family finally pulled the company through.

The same year, Ted came back to do a full-time job. He had gained valuable experience at J & J and made a brilliant showing for their "catgut" division. He sacrificed a well-paying position because his father needed him. Ted felt that the family should pull together.

And pull he did, for he infused new life and imagination into the promotional efforts and sparked diversification of the company's products. He took charge of direct-mail literature and journal advertising, and soon became sales manager. One of many service items distributed by the company was the "Feeding Calculator," which enabled general practitioners to figure out formulas for a host of individual situations.

In a couple of years the company was prospering. Production, sales and profits made remarkable gains. Manufacturing costs were reduced by installing more efficient equipment. "Life," said E. Mead Johnson, who was beginning to be called "Pop" around the plant, "begins at seventy." From this time on he was contented with his accomplishments.

Ted was a leavening, pioneering force. He instigated the setting up of a pilot plant for producing a new kind of reconstructed milk, following which a milk factory was acquired in Zeeland, Mich. His in-

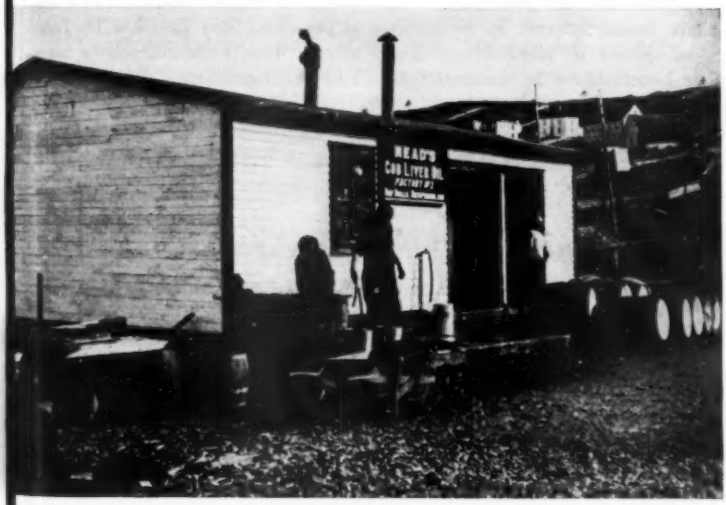
terest in cod liver oil, which until then had been sold unrefined, led to the introduction of a product of standardized potency. For this the company established oil rendering stations in Newfoundland and supervised the product all the way from fish catch to pharmacy shelf.

Research

Mead Johnson & Company had only three chemists in 1923, working in a room 20 x 40 feet. The next year a laboratory building was constructed, with space and equipment for a staff of researchers. Dr. Charles E. Bills of Johns Hopkins University became the company's first research director. Dr. Bills had been experimenting on vitamins, work that meshed with Ted's idea to sell oil assayed in Vitamin D. This led to Mead Johnson & Company's work with synthetic vitamin D and with vitamins A and D from natural fish liver oils.

Ted's heart couldn't stand the strain of an overactive life. He suffered a stroke. His brother James, who had come back from France at

Mead Johnson fishing station at Bay Bulls, Newfoundland. Stations such as this were set up in the midtwenties to collect and extract cod liver oil for processing.



his suggestion in 1920 and was successively purchasing manager and company secretary (Lambert became executive vice president), was temporarily made sales manager. When Ted felt well enough to return to work, James resumed residence abroad. Two years later in 1930, Ted died at the age of 42.

Growth

E. Mead Johnson saw the company increase in size and scope, and maintain a pioneering tradition under the capable management of Lambert. He took satisfaction in knowing that his voluntary ethical marketing policy was serving the profession and the public.

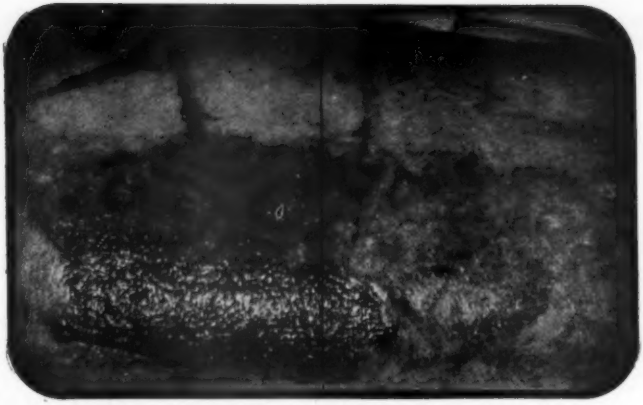
His broad interest in humanity found outlets in philanthropic and civic benefactions. In Evansville he donated the Public Health Center and supplied it with baby food to be issued at its clinic without charge. He invested $500,000 in the construction of a waterfront terminal to help the city grow as a transportation center.

E. Mead Johnson lived until 1934, a few months short of his eighty-second birthday. He saw the introduction of the company's special cereal products but not the later achievements in pharmaceuticals and parenterals.

His son Lambert guided the organization for the next 21 years to greater growth. And ultimately the third generation of Johnsons kept faith. D. Mead Johnson, Ted's son, is president, and Lambert D. Johnson Jr. directs the company's international operations.

NEXT MONTH

William S. Merrell, who founded a business on unshakable ideals and $200 in capital.



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Jeffords, J. V., and Hagerty, R. F.: Ann. Surg. *145*:169, 1957

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DOCTORS DISCUSS...

. . . fees and fee splitting, free choice of physician, cooperative health plans, and doctors' incomes.

Recently, a panel of physicians took part in a TV (WABD, New York City) roundtable discussion covering many topics of interest to our readers. With the permission of the network, we are publishing a transcript of this telecast which was moderated by Howard Whitman, author of a number of articles and books on many subjects.

MR. WHITMAN: **Tonight we will consider a number of questions concerning medical and hospital care. Although the American Medical Association has been opposed to a national health insurance program, Dr. Butler has gone on record as favoring, along with the Physicians Forum, such a program in this country. Why do you support the idea of a national health insurance program, Dr. Butler?**

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DR. BUTLER: We need a national health insurance program to pay for the mounting costs of medical care—a cost that too frequently cannot be met by the patient suffering illness—and I believe the AMA will change its view and eventually accept this fact.

Charge

MR. WHITMAN: **Well, Dr. Butler, what about the AMA's frequently reiterated charge that the Physicians Forum, with which you are associated in an executive capacity, is a left wing, radical or even communistic group?**

DR. BUTLER: Well, a good many charges have been made against many organizations. I think I remember that Harvard

Television Panel

Dr. Allan M. Butler, Professor of Pediatrics, Harvard Medical School, and Chief of Childrens Medical Service, Massachusetts General Hospital;

Dr. Alfred P. Ingegno, Clinical Associate Professor of Medicine, College of Medicine at New York City, State University of New York and Attending Physician, Long Island College Hospital, Brooklyn, New York;

Dr. Samuel Standard, Associate Professor of Clinical Surgery, New York University School of Medicine and Director of Surgery, Sydenham Hospital, New York City.

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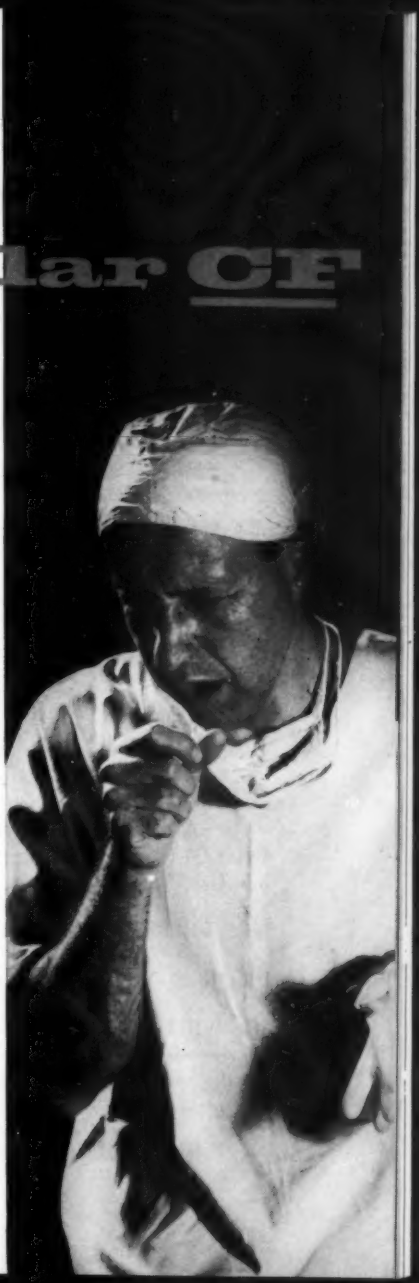

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University has been charged with being radical and left wing. Some of the people running for presidential office in this country have been charged with being radical. It's all the point of view as to what you call progressive, radical. No one has ever seriously charged the Physicians Forum with being radical or left wing.

MR. WHITMAN: **What about other charges frequently hurled that those like yourself, who are in professorships, teaching medicine, may simply be envious of the private doctors who are coining the money?**

DR. BUTLER: I think if you knew the medical profession you would appreciate that what is really true is that the private doctor who's coining the money—and I mean big money, I mean $100,000 a year or so in his private practice—is envious of the professor who is receiving $15,000 or $18,000 a year.

MR. WHITMAN: **The shoe is on the other foot. Well, let's talk about fees that pile up into the $100,000 a year incomes. Do you think, Dr. Butler, that physicians should make big money?**

To serve

DR. BUTLER: No, I don't think anybody who is interested in making big money should go into a profession whose object really is to serve people who have suffered misfortune. And to make big money out of helping people who have suffered misfortune, I think means that a doctor has an attitude which keeps him from being a proper physician.

MR. WHITMAN: **Dr. Ingegno do you share this view?**

DR. INGEGNO: One hundred percent.

MR. WHITMAN: **How do you feel about surveys on doctors' salaries which show that the net average for doctors throughout the country is $16,000 a year and that one doctor out of fifty makes over $50,000 a year?**

DR. INGEGNO: I know that some time ago a survey of this

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*L. O. Randall and J. Selitto, *J. Am. Pharm. Assn. (Sc. Ed.), 47*:313, 1958.

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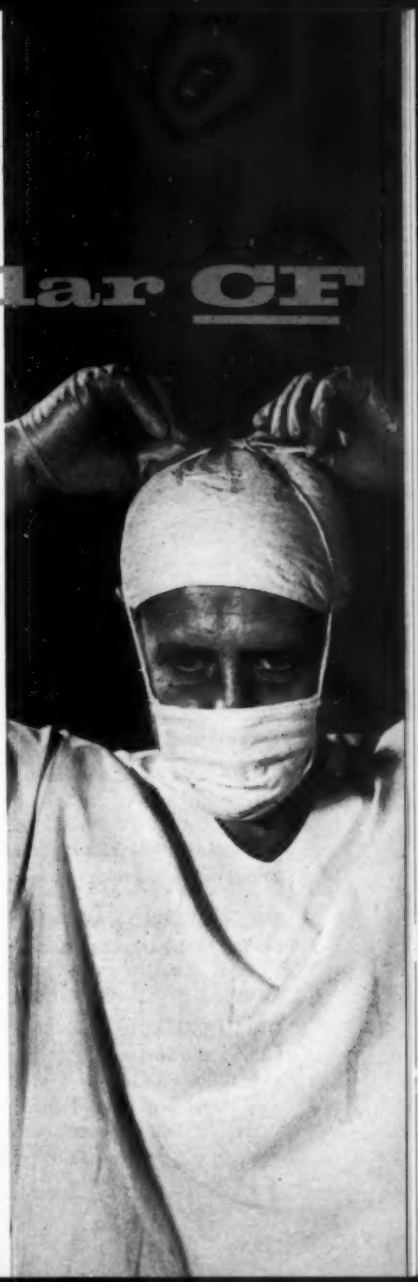


sort appeared in a magazine which is widely circulated among physicians. I don't recall what the net income was but I took the trouble to figure it out on the basis of the number of hours that the physician put in per week, and it figured to something like $3.61 an hour, which I didn't think was too much.

Clean house

MR. WHITMAN: **Have you heard the statement of the former AMA president, Dr. Louis H. Bauer, to this effect? As one of the medical profession's objectives, he set forth: "To clean our own house by disciplining those physicians who are tarnishing the reputation of the whole profession by unethical acts of overcharging."**

DR. INGEGNO: I think every right-thinking physician feels that way.

MR. WHITMAN: **I'm asking you if such unethical acts of overcharging do, in truth, exist to any great extent?**

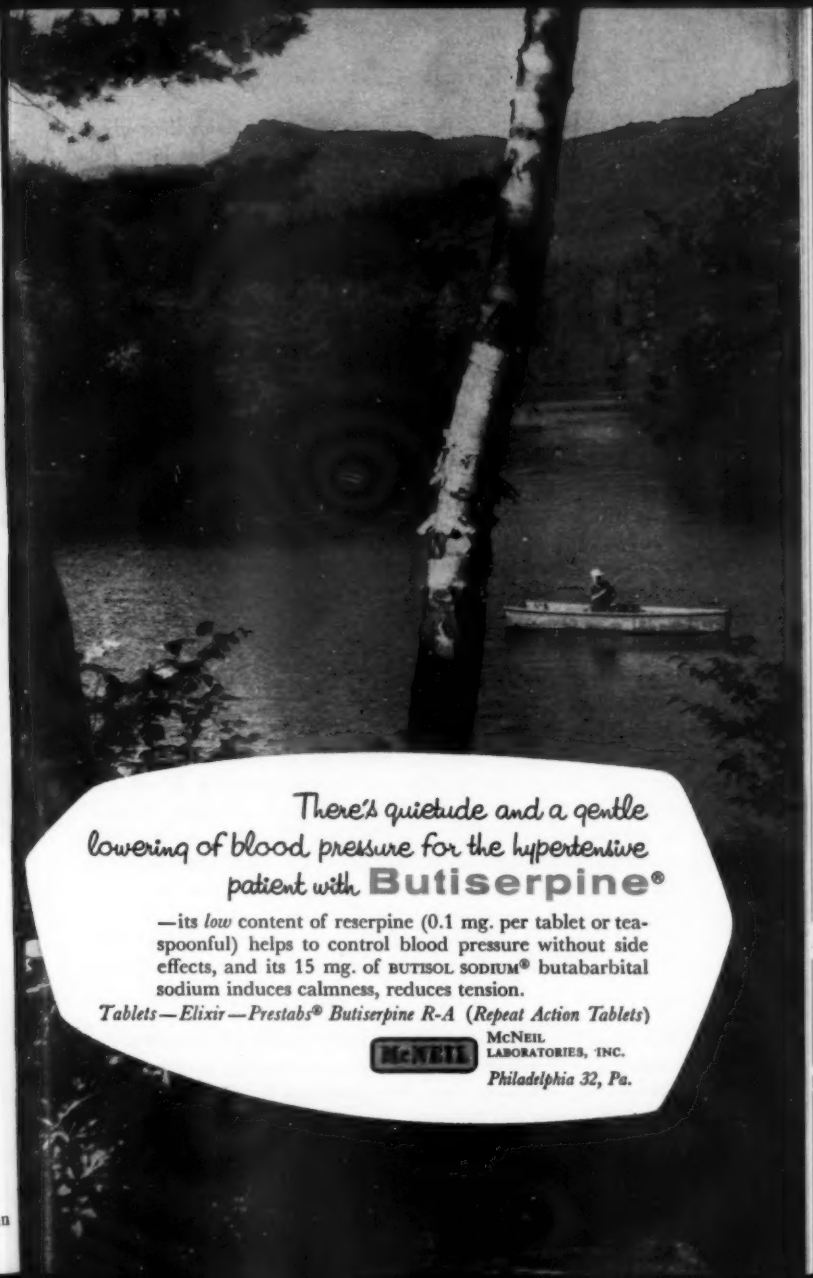
DR. INGEGNO: I don't think they're widely prevalent, sir.

DR. BUTLER: Could I give an excuse for the doctor's doing this? I don't think it's altogether the doctor's fault. Medicine in this country has gotten in a bad habit of paying very high fees to surgeons; and until the whole profession, not just individual doctors, accepts the fact that something should be done about this difference in the remuneration of surgeons as compared to internists or other types of physicians, you're just going to have doctors who charge excessive fees.

MR. WHITMAN: **All right Dr. Standard, your answer to this charge that surgeons charge too much.**

Fees

DR. STANDARD: I would say that what Dr. Butler says is true. I think the surgeon's job, when he does it, is a rather dramatic one. I don't think it's a more important one than the medical man does, but it is dramatic. The patient feels he has been subjected to something near death, and when he comes through he feels terribly grateful. And I think, too often, the surgeons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begin to believe what the patients tell them about their greatness. I think a surgeon deserves to be paid for his hire. I do think that in group practice where there are surgeons and medical men, they divide this thing equally, as they should. But as private practice goes on today, I do think that surgeons' fees are proportionately higher than the fees of medical men. I might say it takes a surgeon longer to be prepared for it. I might say the surgeon's work means greater tension, greater physical exertion. I think perhaps he has more worries on his mind than the medical man, and perhaps he should be paid *some* more. But I do think that in these categories of high fees when you speak about $100 or $200, or whatever thousands of dollars you're talking about, I think there would be too large a proportion of surgeons among these and too small a proportion of medical men.

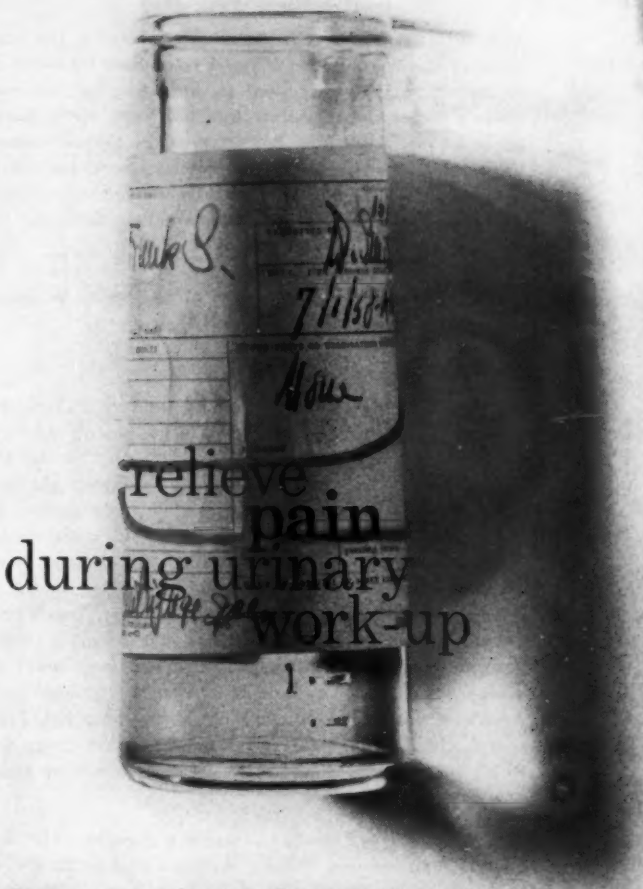
MR. WHITMAN: **Dr. Standard, are surgeons ever forced to split their fees with the general practitioner who refers the patient to them?**

Dishonest

DR. STANDARD: No more than any other honest man is forced to do a dishonest thing. The difference I think between a profession and trade is that in the profession we create our own ethics and our own morals. I think the trade slogan is "caveat emptor," let the buyer beware. In medicine, the buyer can never beware and therefore it imposes upon the doctor himself a greater responsibility to be honest. I think when you talk about fee splitting you're talking about dishonest medicine, and I think there is no end to dishonesty. I think what we're trying to discuss here is honest people trying to arrive at the best way to treat people. Once you take fee splitting into a discussion you're not talking about honorable people in the medical profession.

MR. WHITMAN: **We're talking, however, about protecting the public and keeping the profession as honest as possible—policing it, as it were. Now, the American College of Surgeons to which I trust you belong . . .**

DR. STANDARD: . . . I do.



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MR. WHITMAN:. . . **has fought fee splitting for years and some of the charges that it has leveled have included charges of unnecessary surgery, that is, operating on someone who doesn't need an operation but has one solely because a general practitioner who has referred the patient wants to get his split on the operation. Particularly operations for female trouble, such as hysterectomies, and uterine suspensions. The American College of Surgeons has called these the rape of the pelvis.**

How do you feel about unnecessary operations by a venal combination of a fee splitting surgeon with a demanding general practitioner?

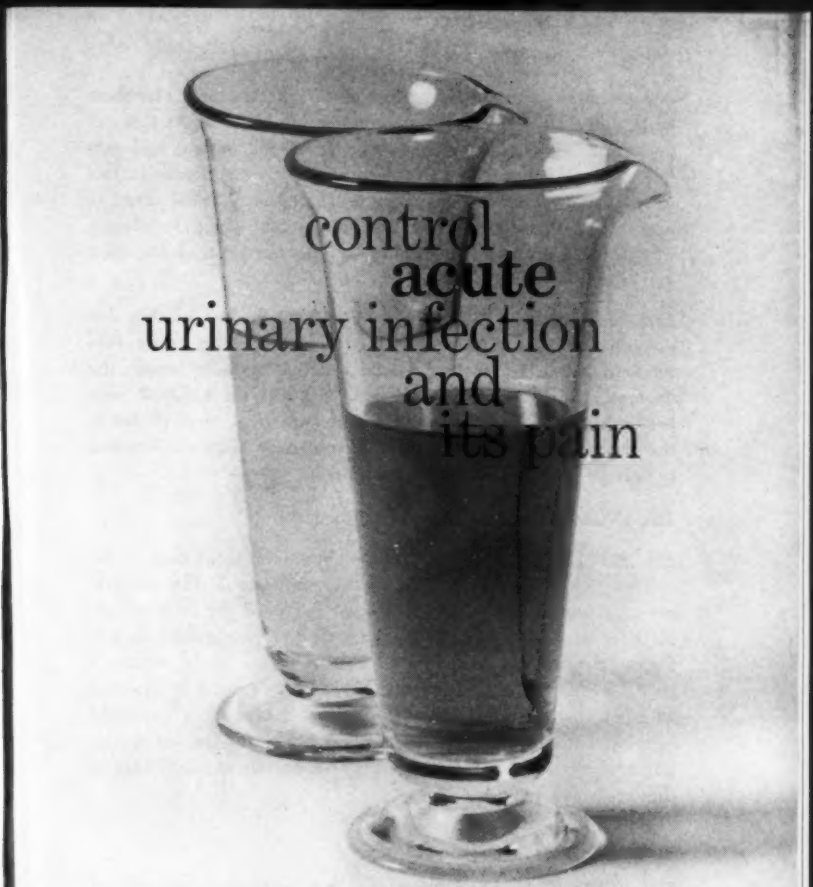
Unnecessary surgery

DR. STANDARD: Exactly the way you feel. I think that anv hospital that permits such a thing to go on isn't worthy of the name of hospital. Every hospital now has what we call a pathology or tissue committee. Every organ that's brought up to the pathology department is gone over. If this is a normal, healthy organ, the surgeon is called to book and if the surgeon can't forget how to do this or stop it, he is not permitted to work in this hospital. I think there is little of that going on, but if it is, it's dishonest medicine and dishonest surgery. There's one point I think that should be mentioned and that is that, in these group practice units fee splitting disappears and unnecessary surgery disappears. Here are two of the ills that are brought up by the American College of Surgeons, and very properly, which are completely eliminated in group practice—that group practice which the AMA in 1938 sought so hard to destroy and which now they embrace.

MR. WHITMAN: **I would like to put a question to Dr. Ingegno on this same subject. Doctor, we know that in 23 states there are laws against fee splitting. In fact, laws which make fee splitting a criminal offense, with fine and imprisonment. Yet, there is not one case on record—the AMA itself tells us this—of a doctor being prosecuted for fee splitting. Now, what's wrong?**

Evidence

DR. INGEGNO: I suppose the difficulty is in getting the evi-



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dence that would convict a man of this particularly reprehensible type of action. It's almost impossible to do so, as you can understand. There is the man who sends the patient and gets the split, and then there is the surgeon who acquiesces in this act, and it's almost impossible to get either one of them to incriminate himself. Obviously in our system of jurisprudence, whether it be under the law or in our professional societies, you can't get a man to incriminate himself.

MR. WHITMAN: **Well now, you agreed earlier in this discussion with Dr. Butler about the motives for going into medicine, and Dr. Butler brought out that actually among the doctors, they'd rather have this $15,000 to $18,000 professorship than the $100,000 private practice. Now, if this is the doctors' attitude, why the fee splitting? Why the sending people in for unnecessary operations?**

DR. INGEGNO: This is not widespread . . .

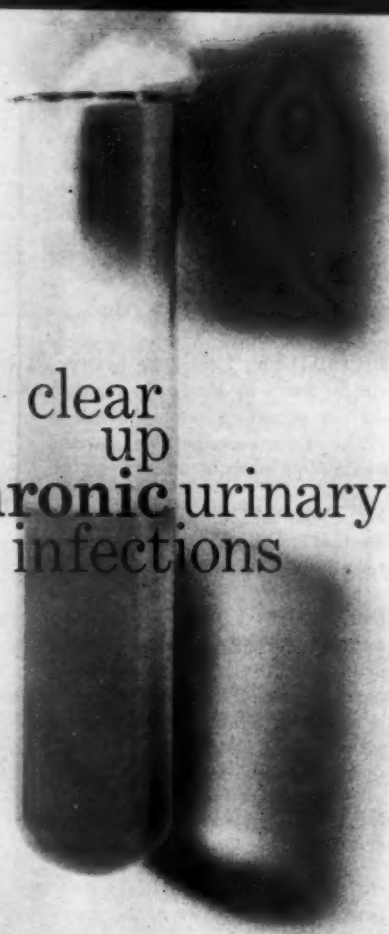
DR. BUTLER: . . . I don't think there is a great deal of fee splitting and I really think it is overemphasized. The thing to me that should be emphasized about the word *fee* in medicine, is that *fee for service* in medicine is the wrong way to pay for it. It puts the doctor in a position where he is earning a living on his patients' being ill and it doesn't put the emphasis where it belongs, and that is the doctor earning a living by keeping patients well. The sooner we get rid of fee for service payment of doctors, the better off will be our medical care of the American people.

Group health

MR. WHITMAN: **Dr. Butler, you had made the point that in group practice a number of the evils to which we have been referring have been eliminated. How?**

DR. BUTLER: Well, in well-organized group practices, doctors are paid salaries and so don't work on this fee for service basis. Also, I assume you're referring to the type of group practice where there is group insurance and the service is rendered by a group of doctors selected in terms of their competency.

MR. WHITMAN: **I think we might say like the HIP, Health Insurance Plan of New York.**



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DR. BUTLER: That's right. Now, any individual who elects to receive medical care under HIP does so out of his free choice to get medical care in that manner. He is, however, limited in receiving his medicine from the group of doctors providing this insurance medicine under HIP management. So, in a sense, he has a limitation in the number of doctors he can turn to for his medical care.

MR. WHITMAN: **Can he choose the one he wants?**

DR. BUTLER: I think he has certain leeway in choosing the one he wants as his family physician within the group of HIP that is providing comprehensive medical care. He has free choice in the sense that this is what he wants and he knows what he's getting when he elects to get his medical care from HIP.

MR. WHITMAN: **All right, now two questions. First, the original question: How then, have the evils to which we referred been eliminated?**

DR. BUTLER: They have been eliminated because an organization is paying attention to the competence of the doctors in filling the role they are filling in the HIP service. They are paying attention to the economy with which the medical service is rendered, and on the insurance basis the cost of the medical care is being distributed so that the person who is suffering serious illness isn't carrying a burden that he can't manage.

MR. WHITMAN: **Second question: Is the medical care as good?**

DR. BUTLER: The medical care varies according to the competence of the doctors in the group that is providing it. It can be the best. Nobody has ever suggested that this type of organization isn't favorable to a high quality of medical care.

Free choice

MR. WHITMAN: **All right Dr. Butler, now let's turn to Dr. Ingegno and let us ask you this, Doctor: Why has the AMA so consistently opposed plans like HIP in New York?**

DR. INGEGNO: We've opposed plans like HIP in New York

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because free choice of physician was not permitted. Now, Dr. Butler made the point that the patient chooses when he enters the plan. Of course, this is a little bit specious in this connection. A considerable proportion of the patients in HIP are civil service employees of the city and the fact remains that they either join HIP if they want to have half their medical care insurance premium paid, or they can go out and pay for their medical care insurance all by themselves. Now this may be free choice but it certainly is free choice with an economic penalty, and when you have that I don't think you have free choice.

MR. WHITMAN: **Dr. Butler?**

DR. BUTLER: I would just say, why has the City of New York provided this medical care through HIP? I think they've done it because, to the City of New York it gives the highest quality of medical care most economically, and so is the most justifiable way by which the City of New York can contribute to the medical care of its employees.

Coercion

MR. WHITMAN: **Do you think there's any coercion, any economic coercion?**

DR. BUTLER: Only economic coercion in terms of fulfilling a responsibility to see that the city's money isn't wasted on days lost through illness of employees who in seeking medical care by free choice may obtain doctors that don't render economical and effective services.

DR. INGEGNO: This, of course, I think, is a matter of opinion, that this is the better way to render medical care. The fact is that the city employees can't even have the Blue Cross premium —that is, the hospitalization insurance—paid by the city unless they join HIP. This is a type of compulsion that is to us distasteful. We don't have any objection to group practice, to prepaid group practice. But we certainly do object to two aspects of it particularly. The one I have just referred to, the economic compulsion among city employees, and the other, the indirect advertising.

MR. WHITMAN: **Dr. Standard, you've been listening avidly. I'm sure there are thoughts you'd like to contribute.**

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DR. STANDARD: Well, I would like to ask a question before I make my statement. I'd like to ask it of Dr. Ingegno. Does he believe that when free choice is not thoroughly free, medical care is poorer for that reason?

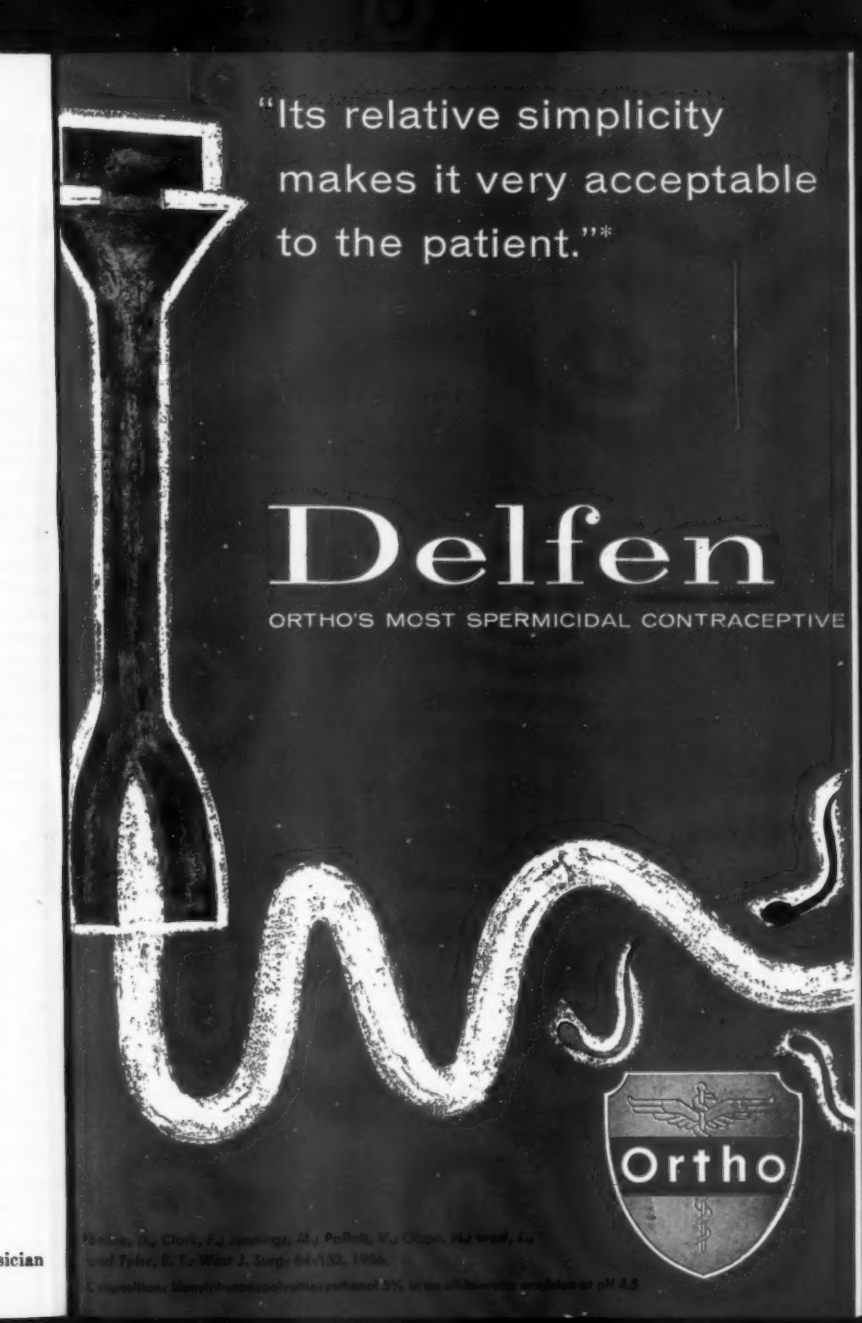
Municipal hospitals

DR. INGEGNO: Not necessarily. It may be. As far as the individual patient is concerned, I think an important ingredient of medical care is confidence in one's physician, in one's freely chosen physician, and I think if that is limited, to that extent you may impair good medical care. I don't want to reflect on the professional capabilities of anyone engaged in that particular mode of practice.

DR. STANDARD: I asked the question because, if that's so, if medical care could be considered inferior because free choice is denied a patient, then I would say that of the 50,000 beds we have in New York, 20,000 of them are in municipal hospitals. The municipal hospitals take care of the indigent poor of the city. The indigent poor of the city have no free choice; not only do they have no free choice of the doctor, they have no free choice even of the hospital they go to. Where they go is determined by the district they live in. But I would say, having lived my whole professional life at Bellevue and at Sydenham Hospital, that the medical care given in those hospitals to the patient is fully as good as we have in any other hospital where there is so-called free choice.

Another point about free choice is that I think it's getting to be a shibboleth, a slogan, rather than a truth. People go to some of the larger clinics—let's mention the Mayo Clinic in Rochester, the Lahey Clinic in Boston—they choose the clinic because they trust the group. They do not know who is going to take care of them and they have no free choice of the man who will take care of them. They are told Dr. X will take care of you. So long as they are doing well, they are perfectly happy about it.

Furthermore, I think this so-called free choice is limited at best. A physician who sends a patient to a surgeon will send him to the surgeon he knows. If he works at a hospital, he trusts these surgeons; he has seen their judgment, he knows they're honorable and he is likely to send his patients to one of one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or two or three that he has there. So the minute a patient comes straight to a physician whom he trusts, as he may come to an organization or a hospital that he trusts, then his choice again is limited to those few. So that when you talk about free choice, it doesn't exist freely, openly in almost any field that we work. Either for the people who pay a great deal or in the others, the indigent poor.

Coverage

DR. INGEGNO: I'd like to challenge that if I may. I agree with Dr. Standard that there are many areas of medical practice in which there is not free choice and he has mentioned one of them. But this doesn't mean that we want to extend the areas in which there is not free choice. We would like to get some of these patients who haven't free choice, and because of circumstances cannot enjoy that privilege, into areas where they can. And voluntary medical care insurance is doing that, I believe.

MR. WHITMAN: **Dr. Butler?**

DR. BUTLER: I don't think there has been a voluntary health insurance scheme that has permitted the free choice in the sense of the patient being able to go to any doctor in the community, and getting what medicine he thinks he needs, that has been able to extend coverage so that the subscribers to the service get any breadth to their coverage. A health insurance service or plan where the patient can choose his own doctor becomes so uneconomical that it can't operate efficiently enough to permit the money being paid by premiums to cover a broad scope of medical care. Whereas, if the organization providing the insurance medicine organizes its service and selects its doctors on the basis of competence to do the job they're going to do in this organization, it is able to provide comprehensive coverage to their subscribers at reasonable premium rates.

MR. WHITMAN: **Dr. Ingegno, what about the charge made by Dr. Standard that this matter of free choice of physician has become a shibboleth?**

DR. INGEGNO: Well, I suppose if you don't agree with it, it

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becomes a shibboleth; if you agree with it, and I think most physicians do and I have the belief that most people do, then you don't consider it a shibboleth. People like to go to their own physician and I certainly don't consider it a shibboleth. I was particularly fascinated by a remark that Dr. Butler made that with fee for service one is sort of living on the ills of others. I suppose a grocer when he sells his groceries is living on the hunger of the public. How silly can we get in some of our arguments! He implies that if there is no fee for service, if one is on, let us say, a salary, that this will solve a lot of ills and I can't agree that such is the case. There may be other ills. A physician who is on a salary, for example, may, since he's going to be paid the same amount anyway, become lazy and lackadaisical and not as interested as he should be.

DR. BUTLER: That is not a very good argument.

DR. INGEGNO: Well, this is possible.

DR. BUTLER: But, it doesn't occur.

DR. INGEGNO: Oh, it doesn't occur!

DR. BUTLER: Most American industry pays people salaries and they work pretty effectively. The Mayo Clinic, The Lahey Clinic, the Massachusetts General Hospital, the Presbyterian Hospital, etcetera, etcetera, pay salaries, and no doctor . . .

DR. INGEGNO: . . . I didn't say, Dr. Butler, that such would necessarily occur, but you implied that because there is fee for service that this therefore, in some way, prevents the physician from giving good medical care, and I thoroughly disagree.

DR. BUTLER: No. It prevents the physician from having as much incentive in keeping patients well and preventing illness, as physicians should have.

DR. INGEGNO: The point I made is that by the reverse argument, one should say that a man on salary, a man who is going to be paid the same amount whether he works or not, may choose not to work.

MR. WHITMAN: **How about it, Dr. Standard? Would you work as hard if you were on salary?**

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DR. STANDARD: The answer to that possibility is that it doesn't happen. The best kind of medical care that we see is in these university centers where people are on salary, so that, although this is mentioned as a possibility, history itself disproves it. There's one more thing I'd like to say, if I may go back for just a moment to the question of free choice. It's an interesting thing to me that I have never heard a patient talk about free choice. I've only heard doctors talk about free choice. It sems to me if this were an important thing to a patient that we would get complaints from them about this. I have never heard it.

MR. WHITMAN: **Dr. Ingegno have you ever heard a patient complain about free choice?**

Expense

DR. INGEGNO: Well, all I can say is that when the patients are given the opportunity as they have been, for example, in certain unions, to go into a plan that provides for free choice or go into the HIP plan, that many of them have changed from HIP to the plan that provides free choice. It seems to me that free choice means something to them. And someone made the statement—I don't know if it was Dr. Standard or Dr. Butler—that HIP's premium was the least in the city. Of course, this is not so . . .

DR. STANDARD: . . . No, I don't think we said that.

MR. WHITMAN: **Well, is this a fact, gentlemen?**

DR. STANDARD: Actually, it costs more.

MR. WHITMAN: **It costs more?**

DR. STANDARD: Of course.

DR. BUTLER: Well, that's because it covers far more. But in terms of coverage, it is inexpensive.

Hours worked

MR. WHITMAN: **What about the money doctors earn? Now, doctors are often reluctant to talk about money; they've taken the Hippocratic Oath, they're dedicated men. Yet, when they get in their associations they take steps, forms of action which are very much oriented to their incomes. It is a fact, Dr.**

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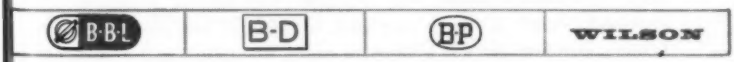

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Ingegno, though the private practitioner made an average of $16,000 a year in 1955, the year of the last survey, the salaried doctor averaged only $12,000. Now, is this one reason why doctors in their trade associations are opposed to being on salary—they'll make less?

DR. INGEGNO: Well, that could be. I mean, the man who is in private practice usually works many more hours than a man on salary. I think the average number of hours in some fields of practice was about 80 hours a week. Now, this is a very long work week and obviously . . .

DR. BUTLER: . . . Undesirable.

DR. INGEGNO: Well perhaps it's undesirable, but physicians do work hard . . .

DR. BUTLER: . . . Oh yes, they kill themselves.

MR. WHITMAN: **Now wait a minute—undesirable in terms of good medicine? Why?**

DR. BUTLER: Because, a physician who is working 80 or some such hours a week can't do the reading, attend the medical meetings and clinics that are essential for him, if he's keeping abreast of advancing medical knowledge and thus meeting his responsibility in patient care.

MR. WHITMAN: **Now, is this overwork going to result in less effective medical care at the cost of the patient's health, perhaps?**

DR. BUTLER: Certainly.

MR. WHITMAN: **Well, Dr. Ingegno, why should a doctor overwork then? Is there anything to prevent him from referring patients after 8 o'clock at night when he's had a full day, to say, "Look, I want to read the latest papers, brush up on my medical knowledge and get some sleep."**

DR. INGEGNO: I think by the way you put the question that you've implied what the answer is. People go to a doctor because they like him, they have faith in him, and they want him. And if he has to work extra hours to supply them with the service

that they want, well this is the field he has chosen and has entered into and he must expect that.

MR. WHITMAN: **Do you think it's dedication and not avarice?**

DR. INGEGNO: I certainly do, sir.

MR. WHITMAN: **Dr. Standard?**

First class

DR. STANDARD: I would like to say that these lower salaries that people get at university hospitals, where they combine both teaching and clinical work, stems from the same disease that other educators in this country are suffering from. Now that we have in education a new growth of interest in educators in science and physics and mathematics, it should be pointed out that educators in medicine, too, are sometimes treated as second class citizens, as are our teachers in our schools and in our colleges, where men of great value, great training, receive salaries that are less maybe than any man who has had far less training than they. And I think the time has come, as Admiral Rickover said not so long ago, that we stop treating teachers as second class citizens, that we should treat them as first class citizens, both by paying them and by respecting them. I think the salary of the teacher in medicine depends perhaps not so much on the fact that he's a doctor but that he's a teacher, and therefore he suffers from a low salary that most teachers suffer from at this time.

MR. WHITMAN: **Well, Dr. Standard, if we paid doctors on salary the very same incomes that they could make in private practice, do you think the AMA would still be opposed to putting doctors on salary?**

DR. STANDARD: If they would be, it would be as unexplainable to me as many of their attitudes have been to date.

MR. WHITMAN: **Another question. If that were the case, do you think some good doctors would be penalized in their earning power while some inferior doctors would make unwarranted incomes?**

Control

DR. STANDARD: Quite the contrary. I think in private practice there is never any kind of control of the private practitioner in his office. Once he becomes a member of the unit, whether it's a university unit or a group unit as in HIP, he is under the surveillance of all the other members of this group and everything he does is followed, so that actually he would have to reach nearer the potential of his greatness than he would have to if he were practicing alone with nobody to judge his work at all.

DR. INGEGNO: This is an odd philosophy to me. I can't follow this, really. What you imply here is that you must keep a close surveillance on a practitioner of medicine. Why you should have to do that on a practitioner of medicine anymore than on any other citizen . . . is something very peculiar to me.

MR. WHITMAN: **Well gentlemen, on that note of mystery and controversy we'll have to leave the question of doctors and medical care. . . . Thank you very much for being with us.**

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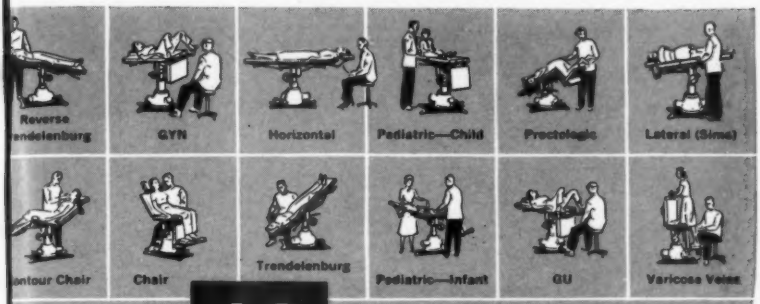

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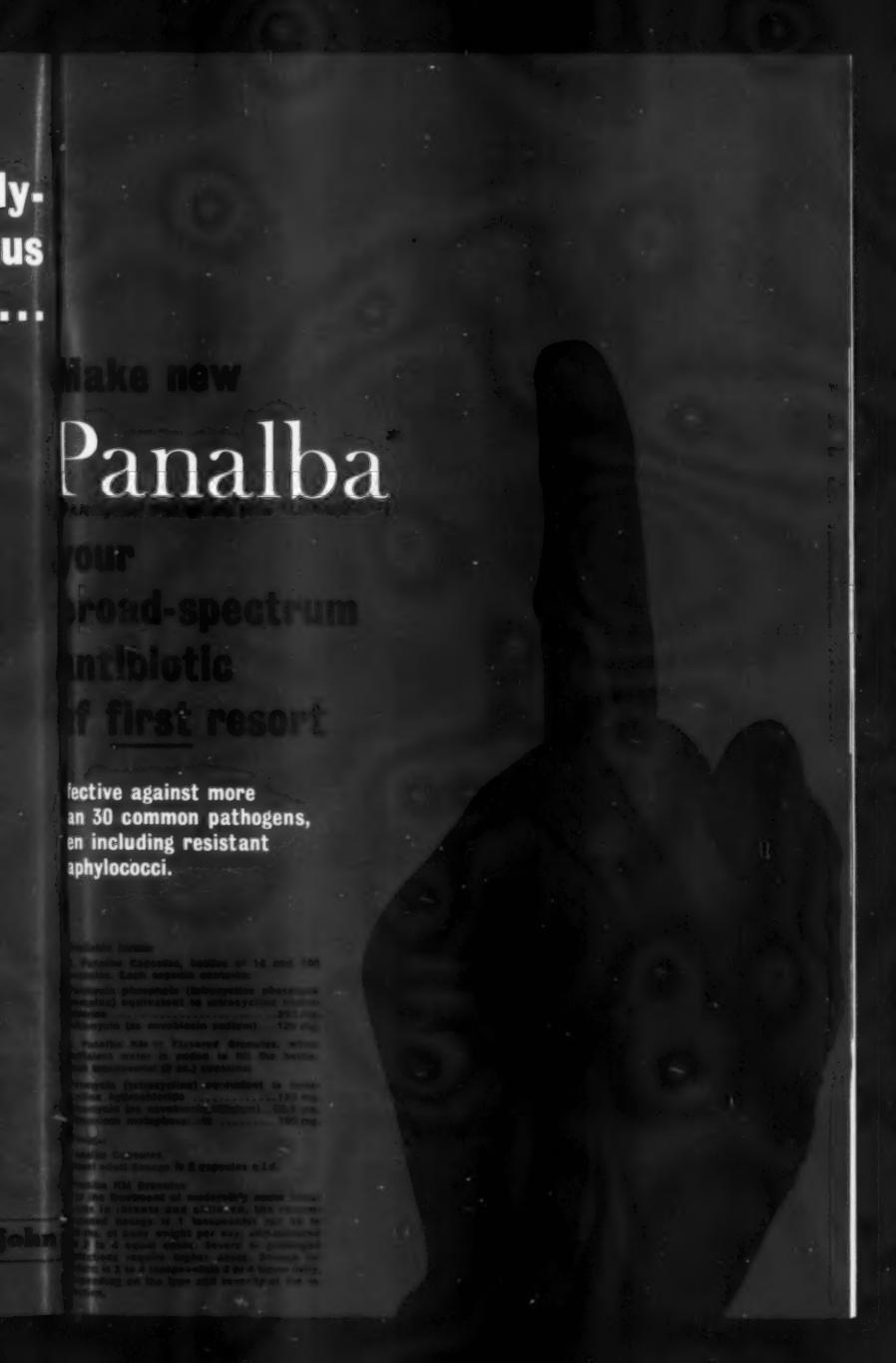
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Second of two articles on clinical photography

How to Take Good Clinical Photos

The supposedly complex technical side of photography has scared off many would-be shutterbugs. Throwing out the hokus-pokus, the author states the necessary fundamentals and lists low cost equipment that will get you going in a simple but rewarding hobby.

Ranes Chakravorty, MBBS

In our first article we stressed the fact that the aperature (size of the opening through which light passes when the shutter is opened) increases as the f/number (or "stop") is reduced. Thus f/2 represents a larger opening than f/3.5.

Also, each higher numerical step in the "standard stop" scale f/2, 2.8, 4, 5.6, 8, 11, 16, 22, 32), represents an opening which is one half the size of the full stop which precedes it on the scale.

Thus, f/8 is one half the area of f/5.6—or to put it the other way around, f/5.6 is double the area of f/8.

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Since the shutter speed of a camera regulates the *length of time* that light is permitted to fall on the film, by varying both the shutter speed and the aperture we can adapt our camera for use under a wide range of conditions.

To understand this flexibility, keep this in mind: Shutter speed and aperture are directly proportional to one another. For example, shutter speed could be doubled, the aperture decreased by half, and the volume of light reaching the film surface *would remain unchanged.*

Or, to state it another way, doubling the amount of time, from say 1/200 second to 1/100 second, has the same effect on the image imprinted on the film as doubling the aperture. Thus an exposure of 1/200 second at f/2 is equal to 1/100 second at f/2.8 and 1/50 at

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[1]Thomson, J. E. M.: Am. J. Surgery 91:413, 1956

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f/4 and 1/25 second at f/5.6.

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Time and quantity

A simple example of the need for such flexibility in control of both time and quantity of light would be the example of a boy on a bicycle. To photograph the boy standing by his bicycle, any one of the previously-mentioned exposures might be used (according to the film and light conditions). However, with the same film, the same camera, but with the boy now riding at full speed past the camera, the photographer would be required to use the fastest shutter speed (1/200 second at f/2). The fast shutter speed is required to prevent blurring of the picture. In other words, what is desired is a nearly instantaneous image of the boy, "stopping" his action for the photograph.

Similarly, in a darkened room, one would be required to open the diaphragm and reduce the shutter speed, thus combining both elements that increase the total exposure of the film to an image.

Fortunately, clinical photography does not require the maximum in versatility of camera equipment. A camera which can provide an aperture of f/3.5 or f/2.8 is generally adequate.

There is one final technical point concerning the aperture. With any lens there is a certain latitude in focusing. In other words, if you focus a lens for an object 15 feet distant, the sharpness of the image will be maximum at that distance and will gradually diminish on both sides of that plane. However, *critical sharpness* (sufficient for general purposes) will be present for some distance less than the 15 feet and for a distance somewhat greater than 15 feet.

Sharpness of focusing implies the representation of a point on the object as a point on the film. This occurs on the focal plane (where the film is located). As mentioned, at planes in front of and behind the focal plane, a point on the object would be blurred or "out of focus."

Depth of field

The distance between the nearest and the farthest points of effective focusing is termed the "depth of focus" or the *depth of field.* The shorter the focal length of the lens, the greater the depth of field.

Also, *the depth of field for the same lens varies with the aperture setting.* The higher the numerical aperture (the smaller the size of the diaphragm opening), the greater the

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depth of field. Thus a setting of f/8 would offer a greater depth of field than f/5.6.

The depth of field is also dependent upon the object to camera distance. The depth of sharp focus at 15 feet is considerably less than at 45 feet.

A depth of field scale is sometimes marked on the lens mount, and in a single-lens reflex system, you can see this depth of sharp focus on the viewing screen.

This property of differential focusing is of considerable practical importance in clinical photography. Often, pictures must be taken in places where there is a confusing background. Under such conditions, opening the diaphragm wide will help blur the background and make it less obtrusive. Thus, you can select the areas to be "in focus" and deliberately throw other areas out of focus.

Where maximum detail of an irregular surface is desired, for example a mucosal lesion in the buccal cavity, it is wiser to use as small a diaphragm opening as is practicable.

Practice

In effect, aperture and shutter speed are a synergistic and symbiotic pair. Proper control of these, together with an intelligent selection of the film, is the basic key to effective clinical photography.

Technically speaking, that's all there is to it. Once you understand the relationships described (and this does require study and concentration, of course), you need only pick out your camera and start practicing. Soon, the control of the shutter, aperture, and depth of field become automatic.

Equipment

Those of you who have a general understanding of the preceding material are, I feel fairly sure, seriously interested in the possibilities of amateur clinical photography. Therefore, let's look at what I believe to be the basic and minimum equipment needed for clinical picture-taking.

In any technical field, there are divergent opinions on equipment selection. And dissentient voices will be raised against some of my statements; however, I now use a system more or less identical to the one to be described and have had consistently satisfactory results over the past half-dozen years.

Expense

The amateur clinical photographic set-up should be as inexpensive as possible. This criterion need be modified only by considerations of versatility. The system should be planned so that the scope of photography can be gradually increased, step by step, without major modifications or discard of equipment.

My own system grew up more or less like a secondary bladder stone

When tension, anxiety accompany a clinical picture of overweight

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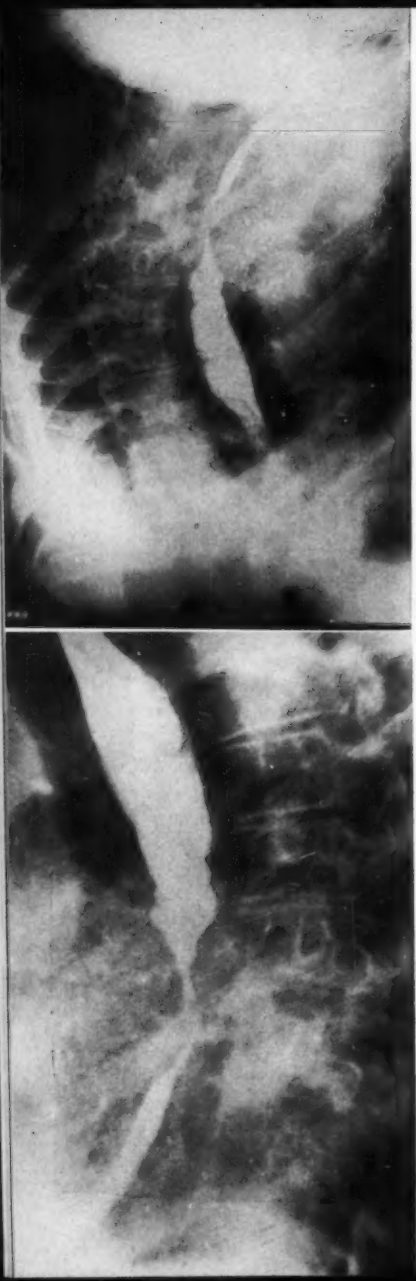

around a pre-existing nidus. I started out with the camera, over the years adding pieces of equipment as needed. Now I am able to do clinical photography in its more complicated aspects such as ultra-closeup photography (for surface detail of small lesions, etc.), photomicrography, copying x-rays and duplicating 35 mm. slides. Actually, the equipment I needed for this expansion, in addition to its being acquired quite gradually, did not consist of many or expensive accessories.

Portable, accurate

It is important that your camera and accessories be as portable as possible. During a single day you might have occasion to use the camera in the clinic, in the inpatient wards at the bedside, in the operating room or in the pathology laboratory. So the system should exclude bulky, heavy or extra delicate components.

Finally, the equipment should be as accurate as possible. Photographic magazines often detail stories of professional photographers who used dozens of exposures to get one or two satisfactory negatives. This "spray" or machine-gun

Top, barium swallow demonstrating carcinoma of the esophagus. This is the closest view obtainable with the unaided camera lens. Bottom, further close-up with a +2 supplementary lens.

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AVERAGE THERAPEUTIC DOSE IS ONLY 1/3 THE TOXIC DOSE.* The average therapeutic dose of other digitalis preparations is approximately 2/3 the toxic dose.

ELIMINATION IS FASTER than that of digitoxin or digitalis leaf. Therefore, toxicity, should it inadvertently occur, would be of much shorter duration than with either one of these preparations.

EASY BECAUSE—You can easily maintain uninterrupted control of your cardiac patients when you transfer them to Gitaligin by following the simple dosage equivalents listed below.

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DIGITALIS LEAF	0.1 GM.	0.5 MG.
DIGITOXIN	0.1 MG.	0.5 MG.
DIGOXIN	0.5 MG.	0.5 MG.

SUPPLIED—Gitaligin TABLETS 0.5 mg., bottles of 30 and 100.
Gitaligin INJECTION 2.5 mg. per 5 cc. sterile I.V. solution, boxes of 3 and 12 ampuls.
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*BIBLIOGRAPHY AVAILABLE ON REQUEST.

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Left, enlarged axillary nodes in a man with lesion in neck. Below, close-up view of lesion in right supra-clavicular area with a +3 supplementary lens. This lesion histologically was an intraepidermal malignant melanoma.

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Whenever a diagnostic "tool" can give you some *added* advantage in *better* performance or *wider* usefulness – your own diagnostic skill is aided by *more complete facts*, and your time is saved through simpler, more convenient use. *Each of these Sanborn instruments gives you just such added advantages.*

With the new Rappaport-Sprague Acoustic Stethoscope, sounds which are only faintly discernible or at the threshold of audibility with conventional stethoscopes become clearly audible, providing new assurance in auscultation. Equipped with five chest pieces for sensing and localizing sounds of various pitch, and three sets of ear pieces for proper fit, this new Stethoscope clearly reflects the results of ten years of research and investigation undertaken during its development.

In the Visette electrocardiograph, *true* portability in a clinically accurate ECG is now a practical reality. By its brief case size and 18-pound weight, the Visette lets you take 'cardiography *to your patient* – in his home, at the hospital, at an industrial plant clinic, wherever the need exists. Modern electronic components – a new, much lighter galvanometer – design innovations ranging from pushbutton grounding and double-check standardization signals to fully automatic stylus stabilization as leads are switched – make the Visette the most *convenient* ECG you (and your technician) can use. And this first (and still the only) 18-pound 'cardiograph is now *being used* by more than 3000 doctors, both here and abroad.

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MEDICAL DIVISION 175 Wyman Street, Waltham 54, Massachusetts

method of photography is to my mind as deplorable as the blunderbuss technique of antibiotic therapy.

In clinical photography we have to have the same ideals as Ehrlich with his "therapia sterilisans magna." In other words, plan carefully, take one shot, enjoy complete success!

This is particularly important with color film and in clinical situations where the manifestations may change rapidly. This, incidentally, is also my major excuse for having gone into the fundamentals of the photographic process in the preceding section—so that some idea of the mechanical factors controlling photography can be a part of your background for determining the perfect combination of camera settings.

I believe the camera that best meets our particular requirements is a 35 mm. single-lens reflex type camera. The size of the film makes the material inexpensive (comparatively) and also lessens the bulk of the camera. The photography department at our hospital charges $4 for each lantern slide (color) ordered. My average expense for a 35 mm. color transparency is about 18 cents!

The 35 mm. transparencies when projected on a screen compare very well in fidelity of reproduction and in projection characteristics with the bigger lantern slides. Their small size makes storage, handling and transportation fairly simple. By the same token they are also much less fragile.

Of the various types of 35 mm. cameras available, a single-lens reflex type is preferable because, as explained before, parallax is totally obviated. Furthermore, for certain types of work, additional equipment such as extension tubes and supplementary lenses must be used. These alter the refractive properties of the lens; in non- (single-lens) reflex type cameras, focusing under such circumstances means either buying special finders or using the cumbersome, and sometimes impractical method of a ground-glass finder on the film plane to achieve focus.

For ultra-closeup photography, extensions are used between the lens mount and the camera body; for microphotography, the camera lens is removed, the eye-piece and the objective of the microscope serving as the optical system. If you plan to include either of these types of photography, you must have a camera with a detachable, or to be technically more exact, an interchangeable lens system in which the camera body and the lens mount can be completely disassociated and again easily and exactly reassembled.

(While the possession of a single-lens reflex, 35 mm. camera with an interchangeable lens is a great advantage, practically any camera can be adapted to take clinical photographs. Most cameras can even be adapted to perform the more specialized functions. The first

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and inflammation with

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No sodium accumulation. Because BUFFERIN is sodium free, massive dosage for prolonged periods will not cause sodium accumulation or edema, even in cardiovascular cases.

Each *sodium-free* BUFFERIN tablet contains acetylsalicylic acid, 5 grains, and the antacids magnesium carbonate and aluminum glycinate.

References: 1. J.A.M.A. 158:386 (June 4) 1955.

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Copy of a photograph attached to the chart.

microphotographs I took were with a 2¼″ x 2¼″ double-lens reflex camera with a nondetachable lens.)

Price range

The price range of new 35 mm. cameras is from $50 to $400. A good camera can be had for around $100. A good used camera *from a reputable store* is usually a bargain since the price tag is often much less than that of the new model.

If you plan to buy a used camera it would be worth your while to spend a few extra dollars and have the lens performance and the accuracy of the shutter checked. You might also buy some of the accessories described below at the same time; these are comparatively inexpensive and are very useful in clinical photography. Whether you buy a used or a new camera, and whether you buy any of the other accessories, a carrying case for the camera is practically mandatory and should be bought with the camera.

Meter

If you plan to use color film (and color film is very much superior to black and white film for clinical purposes) or if you expect to take photographs under widely varying light conditions, an exposure meter or light meter is a very worthwhile investment. It is true that with a great deal of experience, a near-correct exposure can often be guessed. However, a reasonably accurate exposure meter costs between $8 and $25, and the saving in film alone (not to mention the disappointment of a "missed" shot) justifies this additional expense.

Essentially, an exposure meter is a photo-electric cell, connected to a moving coil galvanometer through a

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resistance. When light falls on the photo-electric cell, a small electric charge is produced and this causes a deflection of the galvanometer needle. A calibrated dial is mounted on the meter face so that the deflection of the needle indicates the combinations of f/value and shutter speed for correct exposure of the film being used.

In choosing an exposure meter, select a model that has a flat and fairly small head (the area which is used to measure the illumination) and where the main dial is at right angles to the head. This mechanical arrangement is useful in some types of clinical photography, especially in copy work. Also, have your dealer check the accuracy of the meter you buy by checking the reading against a source of light whose strength is known.

Incident and reflected

There are two main ways of using the exposure meter—by measuring the incident light and by measuring the reflected light. Both methods are useful and give accurate readings. The instruction manual that comes with your new exposure meter. (unlike a camera, it is preferable to buy a meter new) should be carefully and thoroughly studied to determine the best way of using it.

Supplementary lenses

Most 35 mm. lenses can be focused down to a distance of 18-24 inches. The viewing angle of the lens being constant, obviously the dimensions of the field covered by the lens will depend upon the distance of the object from the lens. If the lesion being photographed is small, the camera will therefore have to be brought closer to the object so that a wide and useless expanse of unimportant field is not included and the object itself occupies most of the picture area.

For this purpose supplementary positive lenses are used. These are available in various strengths, expressed in diopters. In case your physical optics has become a bit hazy, a diopter is the inverse of the focal length in meters. Thus a +1 supplementary lens has a focal length of 100 cms; a +3 lens, a focal length of 33.3 cms, and so on.

If the camera lens is set at infinity (so that parallel incident rays are correctly focused on the film) and a supplementary lens placed in front of it, the object-to-lens distance for critical focusing should be the focal length of the supplementary lens. This object-to-lens distance gets proportionately less as the camera lens is set at distances closer than infinity.

A single or combination of supplementary lenses can be used for thus diminishing the near-point of the camera. In general it is preferable to avoid multiple supplementary lenses if possible, though I have often used two without significant difficulty. For most purposes a +1 and a +3 lens are adequate.

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Detail from engraving of Sir Isaac Newton by E. Scriven.

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With the Baumanometer there is no chance of instrument error to question bloodpressure readings. Baumanometer accuracy is as unchanging as the force of gravity upon which it operates.

With the Baumanometer, you can be sure that any changes in pressure are assignable to causes within the patient, not the instrument.

Only the true mercury-gravity sphygmomanometer can possibly offer permanent accuracy. It is the *only* type of instrument that proves out its own accuracy by returning to zero.

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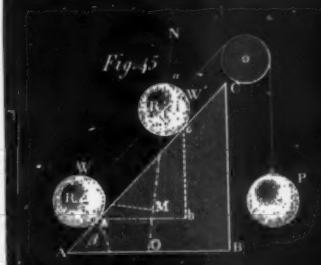

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With supplementary lenses you have to buy the retaining rings which are used to hold the supplementary lens to the main camera lens. These (as also the supplementary lenses, filters, etc.) come in various sizes depending upon the external diameter of the lens mount. Therefore take your camera along when you go shopping for the extra lenses so that you are assured of a correct fit.

Tripod

There are two other pieces of equipment which are quite useful but are not needed to start out with. The first of these is a tripod. This is to steady the camera for taking pictures with long exposures (above 1/25th second as mentioned before).

Of the many varieties of tripods available, I suggest that you spend a few extra dollars and get a model which has a geared center-pole with a rotatable (technically, "pan and tilt") head on top. Be sure to see that the center-pole can be completely removed from the tripod and then reinserted with the head in a suspended position. With this type of arrangement, specimen photography and the copying of slides, etc., becomes quite simple since focusing can be accomplished by gradually cranking the center-pole up or down. Such a tripod will cost about $15.

With the high speed films available today, the use of a tripod for routine clinical photography is quite rare. You can therefore safely postpone buying a tripod till you are ready to go on to the special fields mentioned above. For this purpose a wooden copying-box is very useful. As a matter of fact, in a pinch, you can improvise a copy-box from the cardboard cartons in which bottles of intravenous fluids are supplied.

Lighting

In spite of the fast films, under certain circumstances it is necessary to have some form of extra illumination to obtain good photographic results. This is particularly true if you intend doing bedside photography.

Many different arrangements may be used, from ordinary household bulbs to special equipment used in studios. In this context let me say that I personally dislike flash bulb photography in clinical work. As flash lamps offer only a single point source of light, shadows are very harsh and contours are often partially exaggerated and partially obscured.

Balance

The same argument holds true for electronic flash equipment. There is, however, one notable exception. There is an electronic flash unit available which fits on to the rim of the camera lens and gives even, circular lighting which makes photographing cavities (oral, vaginal, etc.) very simple. However, other than for this special need, at least two light sources, placed some dis-

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*Ford, R.V., and Moyer, J. H.: Rauwolfia Toxicity in the Treatment of Hypertension, Postgrad. Med. *23*:41 (Jan.) 1958.

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alseroxylon 1 mg. and alkavervir 3 mg.
for moderate to severe hypertension. Initial dose, 1 tablet t.i.d., p.c.

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alseroxylon 1 mg. and hexamethonium chloride dihydrate 250 mg.
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Both combinations in convenient single-tablet form.

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tance apart, give more even lighting of the field. Such arrangements, called light bars, are commercially available.

If possible, buy one that has a built-in switch by which the lights can be used at "dim" position for focusing, the picture itself being taken with full illumination. For black and white photography it is immaterial what type of bulbs you use. For color photography the type of illumination is all important and properly balanced light should be used, (with a known "color temperature") so that the color rendition is correct.

Such lamps are called "photofloods" or "reflectorfloods."

Now, let's total costs involved in acquiring a basic set-up for clinical photography.

Camera and case (new)	about $125
Supplementary lenses and rings	10
Exposure meter	15
Total	$150

If you have any sort of camera now, I would suggest trying clinical photography for fun. You will find that it is a satisfying hobby and extremely useful.

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From digitalis to digoxin . . .

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'LANOXIN' is absorbed from the gastrointestinal tract promptly and completely. Its effect is apparent within two hours of oral administration.

'LANOXIN' is virtually completely eliminated within 48 hours of its withdrawal. This is considered to be "the commanding advantage" of 'Lanoxin' because it means early subsidence of toxic symptoms in case of overdosage.

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Medical Texts and the Law

Medical texts are legally classed as books of "inductive reasoning" and therefore are not admissable to prove facts, theories or opinions. However they may figure importantly in a trial, especially in the cross-examination of the medical expert.

George A. Friedman, M.D., LL.M.

The use of medical texts or treatises could be a valuable adjunct to the determination of certain facts in the trial of a legal action.

Several questions of evidence arise, however, concerning the possible use of such medical authorities in the courtroom.

- Can medical books be introduced as original evidence on the direct examination of an expert witness?
- May medical works be introduced in evidence to corroborate the testimony of the witness?
- May such books be used in cross-examination to contradict or impeach an opponent's medical experts?
- What is the scope of cross-examination so far as use of texts is concerned?

A supplementary question concerns use of the text as an aid in forming the hypothetical questions posed to the medical experts.

Exact sciences

Books on exact sciences are admissible in evidence to prove the

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Secret is the Carnation crystal form of nonfat milk, which adapts ideally to self-enrichment. One tablespoon of crystals per glass or ⅓ cup extra crystals per quart brings a new standard of flavor to your patients, gives them an additional 25% nonfat milk nutrition with each serving. Result: "Difficult" patients respond to a richer flavor, require 25% *less* fluid bulk to obtain the same amount of nutrition.

CONVENIENT: Carnation Instant "Magic Crystals" mix completely—even in ice-cold water—with just a slight stir. Always ready to drink immediately—in the home or office. DOCTOR—you, too, will enjoy this refreshing nonfat milk discovery.

facts and conclusions stated therein. Examples of these are almanacs, tide tables, millwright tables, standard encyclopedias (for certain uses), mortality and annuity tables, interest tables (at times), dictionaries, logarithm tables and certain recognized historical works.

Medical books are classed with books on inexact sciences, and have been called books of inductive reasoning. Books on the inexact sciences are not admissible in evidence to prove the facts, theories or opinions stated therein.

Direct evidence

Medical text books are not admissible as direct evidence in any state except Alabama. The books themselves cannot be admitted as documentary evidence to prove the truth of the statements contained therein. This rule assumes that the books or treatises are properly identified or authenticated and applies notwithstanding the fact that the books are recognized standard authorities.[1]

Decedent was a rigger working on a damper in defendant's plant.[2] A metal pin, ten to twelve inches long, weighing between one and three pounds, fell a distance of six or seven feet striking decedent either on the back of the neck or the lower portion of the back of the head.

The blow caused a wound from which a little blood oozed. Decedent continued working without reporting to the plant hospital. He worked for 18 days. On the nineteenth day he was taken to the hospital where he died on the twentieth day of a cerebral hemorrhage.

Dr. Kramer, expert witness for the defendant, testified that a cerebral hemorrhage could not be the result of a blow received 20 days prior thereto. On cross-examination he was asked whether he had heard of a book entitled *Injuries of the Skull, Brain and Spinal Cord,* edited by Samuel Brock. His reply was in the negative.

In response to further questioning, Dr. Kramer admitted that the publishing house was "a recognized medical house," that he had heard of a Dr. Friedman who was referred to in the book and that Dr. Friedman was a recognized doctor in his field.

New trial

Portions of the book were then read to the witness and his opinion solicited. Dr. Kramer disagreed with certain of these portions stating that the conclusions of the author may have been based on cases involving different conditions from those involved in decedent's case. Three pages of the text were then offered in evidence by the plaintiff and admitted by the court. On defendant's appeal from judgment for the plaintiff the appellate court held that the admission of the text as direct evidence was a prejudicial error and ordered a new trial.

Admitting medical books or treatises in evidence to prove the truth of the statements therein contained,

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The unretouched X-ray films show how Lontabs release medication in the digestive tract. So that the prolonged erosion of the Lontab core could be visualized by X-ray, subject was given 10 Lontabs, each containing 100 mg. of a radiopaque substance in place of Pyribenzamine.

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NOW AVAILABLE: Pyribenzamine *Lontabs*—half-strength—50 mg. (light green)—for children over 5 and for adults who require less antiallergic medication.

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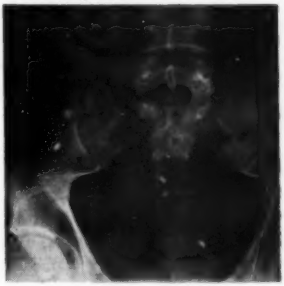
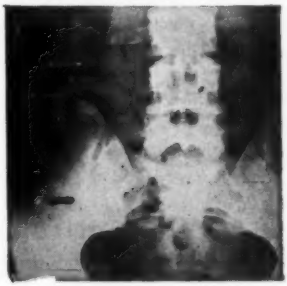
2 hours Lontabs are in the stomach and small bowel. Release of core substance is well under way.

4 hours Lontabs are in the ileum and cecum as core has steadily eroded.



8 hours Lontabs are still visible as substance of core continues to be released.



said the court, would, in effect, "admit into evidence the testimony of the author of the book without affording to opposing counsel any opportunity to cross-examine him. Furthermore, the court would, in effect, be allowing the author to testify without having required him to take the usual oath required of a witness.

"If the book or treatise, or the portion thereof admitted, contained unsound conclusions or inaccurate statements as to facts observed, how could a party show that? Even if he could, efforts to do so would result in side issues as to the merits or demerits of the author of the book, as to the soundness of his conclusions and as to the accuracy of his observations.

"If this kind of evidence were admitted, a party could find a book which supported his case and, by introducing it or a part of it in evidence, have a witness in the jury room on his side of the case, even though such witness had not been under oath and had not been subject to cross-examination."[3]

In other words, the court held that the admission of the three pages of text in evidence violated the hearsay rule, in that opportunity for cross-examination was lacking, and the accuracy or exact weight to be given the author's declarations could not by this means be tested, as in the case of other witnesses.

Other arguments have been advanced for the exclusion of texts in direct evidence, among them, that such technical and scientific writings may not be understood by the jury; that changes in scientific knowledge may make their authority obsolete and outmoded, and that isolated passages may not give a fair statement of the author's views.

Water cure

Defendant physician treated patient's paralysis with a fasting and water cure. The patient died. The defendant's theory was that the remedy chosen was rational, reasonable and scientific. In line with the rule that excerpts from medical books cannot be read to a jury as original and affirmative evidence, the court refused to permit defendant physician in a prosecution for manslaughter to read to the jury from a book entitled *McFadden's Physical Culture*.[4]

Alabama, where medical texts are directly admissible, has the following rationale for its position:

"It is the boast of this age of advancing civilization, that, aided and facilitated by the printer's art, the collected learning of past ages has been transmitted to us. Shall we withhold the benefits of this heritage from the contests of the courtroom? We think not."

Wigmore, an outstanding legal expert in the field of evidence, reasoned that medical textbooks should be admissible as direct evidence since outstanding physicians are usually unavailable in the majority of law-

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suits. The particular expert in a case might not be best suited to testify on its facts. Standard authoritative texts, Wigmore felt, would be trustworthy since the author, in writing for the members of his profession, is reliable and impartial as to the issues in any particular lawsuit. Advances in the profession or disagreement with conclusions of the author might then be brought to the jury by the experts.

May not read

Consistent with the rule that medical books are not admissible as direct evidence to prove the truth of certain facts or statements contained therein, is the rule that medical books cannot be used in the direct examination of a witness. Counsel may not read statements from the book and ask the witness to express an opinion thereon.

Otherwise this indirect admission by means of counsel's questions to his witness would place "the contents of a medical book just as effectively before the jury as though the book itself were introduced."

In a homicide case defendant was convicted of manslaughter. Part of his defense was based on his testimony that he suffered from an attack of insulin shock and coma after the homicide.

Dr. Roe, expert witness for defendant, testified at length on the effect of diabetes, insulin shock and coma caused thereby, and the fact that a person during an attack of insulin shock may be unaware of what takes place around him. The court refused to permit defendant to fortify the physician's testimony by reading from a standard authority on diabetes. This refusal was upheld by the appellate court.[5]

Not prejudicial

It often happens, however, that the trial court will erroneously permit an attorney to fortify the position of an expert witness by reading

throughout the practice of medicine . . .

anxiety

either alone or complicating physical illness

General Practice
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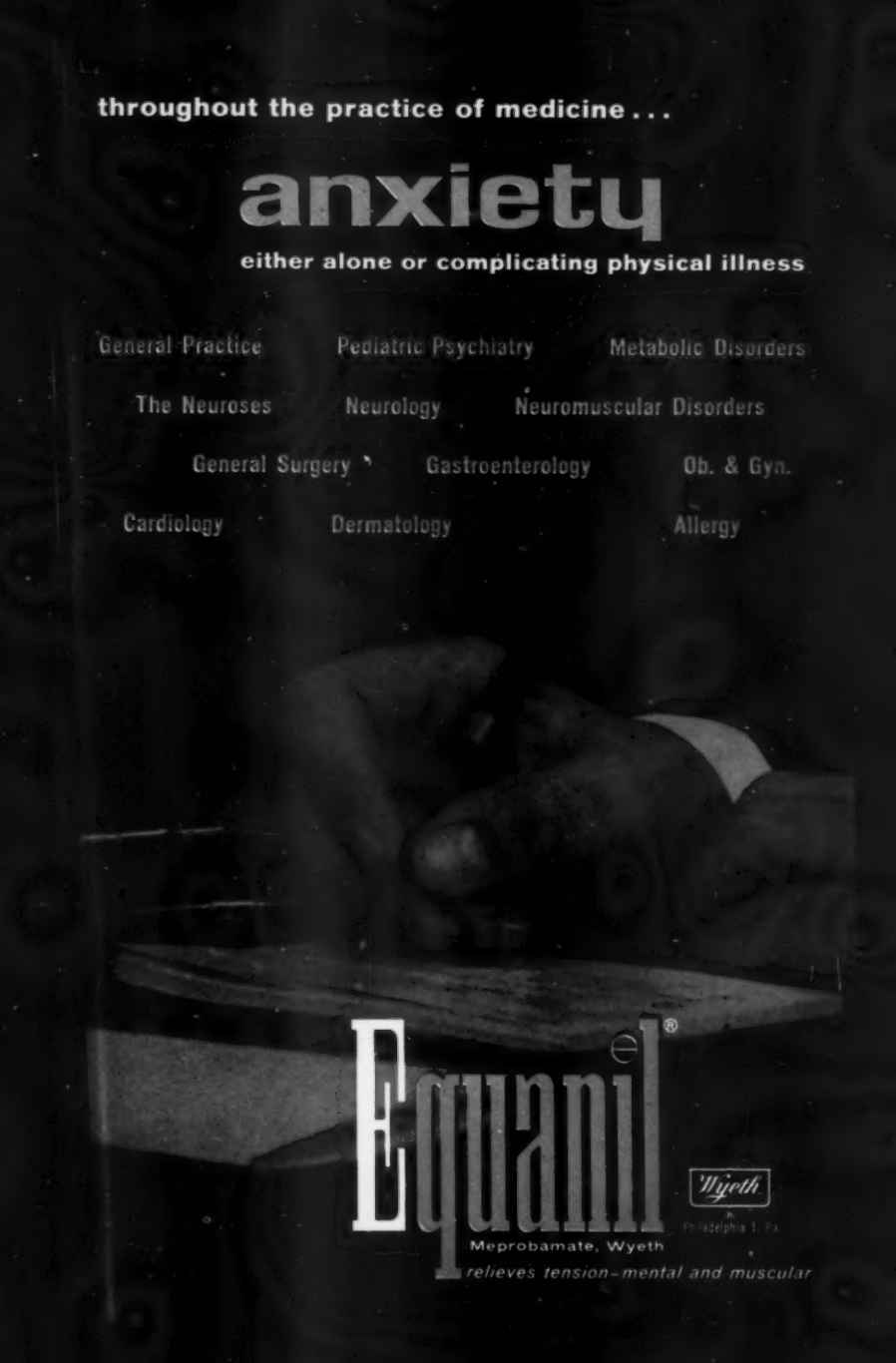

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from a text. Under the circumstances, an appellate court will not interfere with the judgment of the lower court if it feels the error was not prejudicial. Such was the case in *Brown* v. *Los Angeles Transit Lines*.[6]

Mrs. Brown, a passenger in defendant's street car, was injured when it collided with another street car. Experts testified that as a result of the collision Mrs. Brown became a victim of Parkinson's disease. A verdict of $25,000 in favor of Mrs. Brown was returned by the jury.

During the trial plaintiff's attorney was permitted to question his experts on statements from passages in various medical books on redirect examination. The court held that other expert testimony in support of plaintiff's position was so ample that "it cannot be said that fragmentary references to books on redirect examination, if erroneous, constituted prejudicial error.

The same result was had in a 1950 Texas case.[7] A bus passenger was injured by the inhalation of gas fumes. During the trial the judge permitted plaintiff's counsel to read from a book and to elicit from his expert witness testimony that the book was a recognized medical book and that he agreed with the passages read.

The court held that no prejudicial error occurred since the brief quotations did not conflict with the large amount of testimony by the medical experts and was in accord with testimony introduced by defendant himself. The quotations did not concern any disputed issue and could not have affected the outcome.

It is proper for an expert witness to state that his opinion is based on information derived from books, so long as he does not cite the books themselves. The opinion in such a case is his own.

Cross-examination

Passages from medical books, under certain limitations, can be indirectly admitted in evidence by means of questions to the witness on cross-examination of the witnesses. The book, in theory, is not used as substantive evidence, but rather to impeach the witness.

In a 1912 Minnesota case, the witness testified that the authorities supported his view.[8] The court held that the witness on cross-examination might be asked whether a certain medical work, admitted by him to be a standard authority, did not express a contrary view.

Such cross-examination is permissible too for the purpose of testing the qualifications, as well as the credibility, of the expert. The court said further, however, that the purpose and probable effect of such a cross-examination should be carefully considered by the trial court, since the result of reading to the witnesses extracts from the work of an admittedly great medical authority, in such a cross-examination, is to place the evidence before the jury

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1. Feo, L. G., et al.: J. Urol. 75:711 (April) 1956.

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under such circumstances that it may be clearly impossible for them to distinguish between substantive and impeaching testimony.

The courts have taken three lines of approach to the question of the right to quote from medical books on cross-examination of an expert:

- Where the expert's opinion is based partly on specific named authorities
- Where the expert has made a general reliance on medical books

- Where the expert claims his opinion is based only on personal experience and observation and not on any authorities

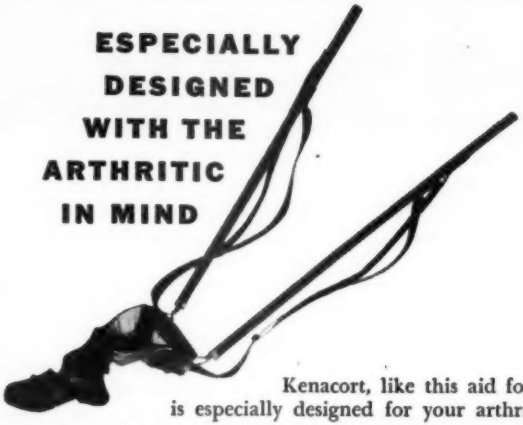
Almost all jurisdictions permit use of texts in cross-examination in situations where the witness has "relied" upon specific medical textbooks as a basis for his testimony. A number of states include situations where there has been only general reliance on unnamed authorities.

Some jurisdictions go even further and permit texts to be brought up for the first time in counsel's interrogation of the witness on cross-examination, whether or not there has been any reliance on authorities in witness's testimony.

Specific authorities

Where there is reliance in direct examination on a specific medical authority, counsel, on cross-examination, may read from that text, interrogate the witness as to whether his opinions coincide with those expressed in the book and as to whether there is a conflict between the opinion he gave and the view expressed in the text; i.e., the text may be used to contradict the witness.

Under these circumstances, the text may be used to impeach the witness, to raise an issue as to his credibility or the accuracy of his information and the value of his testimony, or for the purpose of testing his knowledge as an expert. The text may be used to show the witnes



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- **with no adverse effect on blood pressure** [1,4,6,7,8]
- **on a lower daily dosage range** [1-3]

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was mistaken or otherwise discredit his testimony.

Lewis was injured in an automobile accident and sent to a hospital for treatment of fractures in his left leg. The treatment by Dr. Johnson was unsuccessful and the leg was later amputated.

Lewis sued Johnson for malpractice in using too tight a cast, and failing to have constant after-care and observation of the leg when such a rigid cast was applied. An expert for the defendant testified the patient's leg was suspended in a "Bohler Fracture Frame," that the witness had studied under Bohler and used his textbook, and his opinion was, in part, based on that book. The court refused to permit plaintiff's counsel to cross-examine this expert by use of Dr. Bohler's book, by objections to the impeaching questions. Held, on appeal: This court action was improper; textbooks relied upon by an expert witness may be used as a foundation of impeaching cross-examination.[9]

A 1950 Federal case has taken this principle one step further and permitted the use of a different text in counsel's cross-examination from the one relied on by the expert.[10] The court permitted this despite the fact that the expert denied all knowledge of the text, which appeared to be a standard government manual.

Standard texts

In those jurisdictions which permit use of texts in cross-examination where the witness has relied only on general authority, any standard medical book may be used in the cross-examination.

A physician was sued for malpractice in treating a fracture. The expert witness for the defendant, in his direct testimony, asserted that the method used by defendant in treating the plaintiff was one recognized by the best authorities.

It was held proper on cross-examination to ask the witness to what authorities he referred, and to prove in the course of such cross-examination that the authority referred to did not approve the method used. The books were not for the mere purpose of showing that the author disagreed with the witness, but for the purpose of contradicting and discrediting the witness by showing that the books did not warrant the statements.[11]

Testimony weighed

Mr. Justice Brennan, recently appointed to the Supreme Court of the United States, held, while still on the bench of the New Jersey Supreme Court in 1956, that the attention of an expert witness may be called in the course of cross-examination to statements in conflict with testimony contained in relevant scientific works not relied upon by him to support his opinion but which he recognizes as authoritative.[12]

In that case two expert witnesses for the defendant testified that symptoms of whiplash must appear within

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hours of the accident. Counsel for plaintiff on cross-examination brought out texts which declared that whiplash symptoms could sometimes develop years later. Defendant's witnesses characterized the texts as excellent authority, but disagreed in part with the quoted statements. This discussion over text would enable the jury to decide what weight ought to be given to the evidence of the witnesses, the court held.

Other cases have similarly held that texts may be brought up on cross-examination so long as they are shown to be in general circulation and usage and are standard and recognized authorities.

Courts in the past have limited such cross-examination to texts recognized by the witness on the theory that a dispute over the authoritativeness of a book would provide an ancillary issue itself requiring a trial. More modern practice permits the court to recognize certain books as authoritative and require witness to respond even where he refuses to recognize the authority.

Expert opinion

Those jurisdictions which permit the use of authorities on cross-examination without any reliance by the witness on specific or general authorities do so as a method of testing the knowledge of the alleged expert.

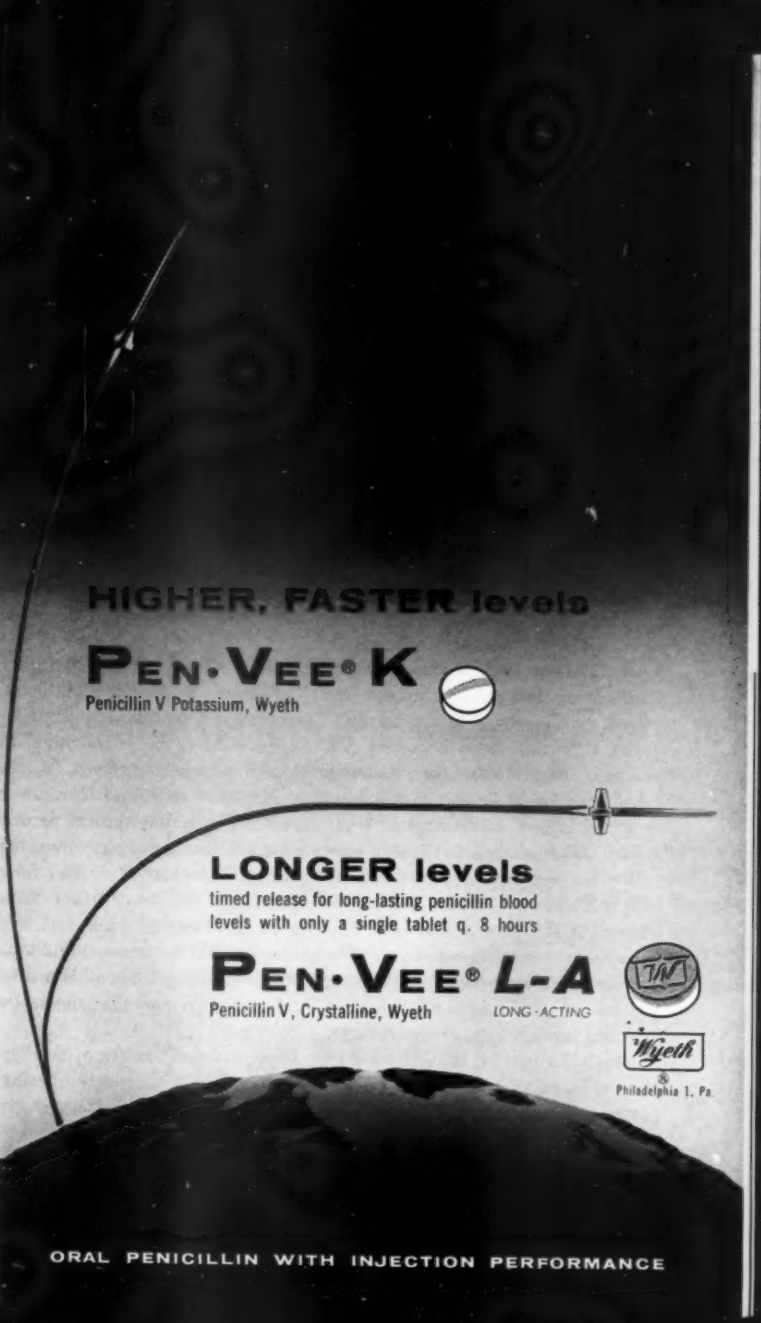
The issue of fact in *Cameron* v. *Benefit Ass'n. of Railway Employees*[13] was whether Cameron was so mentally incompetent when he made a settlement on his insurance policy as to tender the settlement invalid. The physician who attended Cameron testified that some four months prior to and until his commitment to the state hospital for senile dementia, Cameron was sane and competent to transact business.

On cross-examination, counsel for defendant read from a text of a recognized authority on insanity to the effect that senile dementia is a disease of slow progress, sometimes taking years before culminating in the necessity of subjecting the victim to confinement.

Even though the witness testified only to facts coming within his observation the court held that "when the witness expressed an opinion as to Cameron's mental condition, he subjected himself to cross-examination in the light of the opinions of such writers whose works he acknowledged to be recognized by his profession as authoritative on the subject of senile dementia."[14]

The probable key to the reasoning used by the courts in allowing an expert witness who relies only on his personal observations to be cross-examined on the authorities is aptly phrased by Wigmore. "To allow a physician to testify who claims to know solely by personal experience is to appropriate the witness stand to imposters."[15]

Plaintiff was awarded $115,000 for disfigurement, pain, humiliation,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and the development of malignancy caused by malpractice of a physician during plastic surgery on her breasts. The physician-defendant in his testimony did not base his opinion on medical texts. Plaintiff was permitted to use texts on cross-examination. The court held that even though this was error, it was not prejudicial since defendant agreed with and was not contradicted by the text.[16]

Extent of inquiry

In some jurisdictions where the witness bases his opinion in whole or in part on specific or general authorities he can be asked about the teachings of a recognized authority and what they hold. He can be asked his opinion of various standard authorities on the subject matter involved.

But a witness who relies on his personal observations only cannot be asked what a particular text states, or asked to give a summary of what a book teaches on a particular subject. Nor can he be questioned as to specific extracts from, or the contents of, a standard authority.

In some instances where the expert does not rely on any authority, general or particular, texts cannot be used under any circumstances, although ordinarily it is proper to test the learning of an expert for the purpose of showing his qualifications.

The scope of cross-examination is limited to legitimate impeachment of what the witness has testified to, to show such deficiencies in the knowledge of the expert as to the science about which he is testifying as is calculated to impair the weight of his testimony.

The purpose of cross-examination where use of authority is permitted is to test the knowledge, accuracy, learning and weight to be given to the testimony, to impeach or contradict a witness or to make a question intelligible to the witness.

The modern tendency is toward freedom of cross-examination, distinguishing however between legitimate cross-examination and an underhanded attempt to read the authorities to the jury.

Hypothetical question

Use of a medical textbook by counsel merely to aid him in forming a question to be propounded to an expert witness is proper.

Massachusetts and Nevada have recently enacted statutes permitting medical books to be admitted in "actions of contract or tort for malpractice" against certain enumerated professional men and organizations. The court must find that the writer is recognized in his profession as an expert and that the matter is relevant.

An unusual feature of this type of statute is that the party offering the statement, or the book, must give at least three days notice in advance of trial to the adverse party containing the name of the writer and the title

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of the book or pamphlet.

The obvious purpose of this statute is to assist the plaintiff in securing expert testimony in a type of litigation where such testimony is frequently unavailable.

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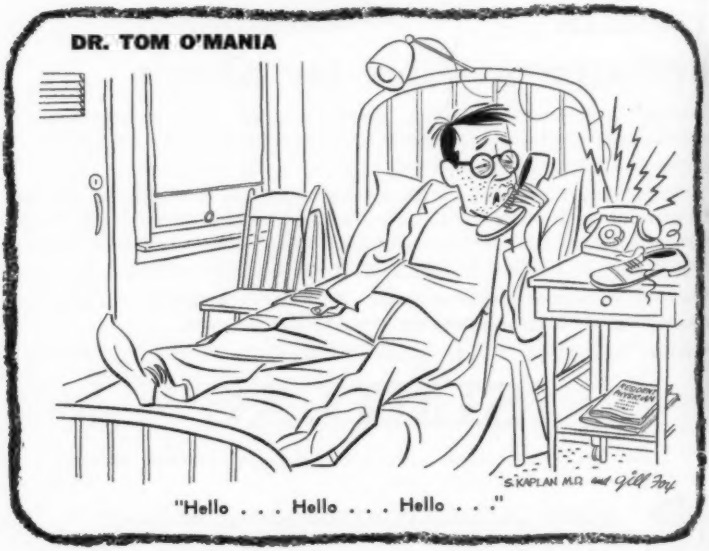

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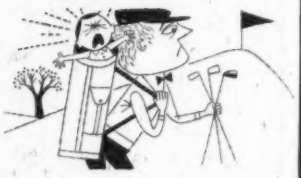
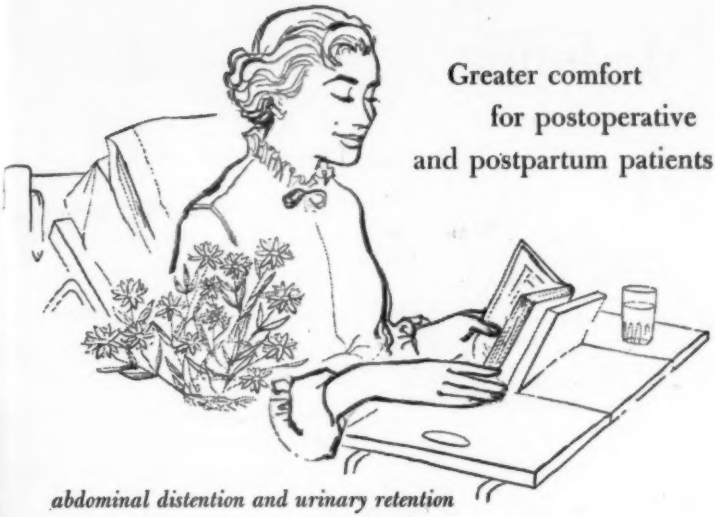
HE SAYS: "Do we have anything planned for this Saturday?"

SHE KNOWS: He accepted a golf invitation and "forgot" he promised to baby-sit so that you could do some unencumbered shopping for a change.



HE SAYS: "I'll probably be home early this evening."

SHE KNOWS: He'll get home at ten instead of ten-thirty. Hurrah!



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Answers will be found on page 229

1. The usual change in the cardiac rhythm of a patient who has auricular flutter and is treated by digitalization is conversion to: (A) ventricular tachycardia; (B) normal sinus rhythm; (C) auricular fibrillation; (D) 2:1 heart block; (E) complete heart block.

2. The murmurs of aortic coarctation are: (A) always diastolic; (B) always systolic; (C) always continuous; (D) extremely variable in form, intensity and location; (E) characteristic and constant.

3. Tactile inattention may result from a discrete lesion of the: (A) posterior columns; (B) thalamus; (C) frontal lobe; (D) parietal lobe; (E) nucleus gracilis.

4. A major practical measure for preventing diabetic gangrene is to: (A) give prophylactic antibiotics to all diabetics over 50 years of age; (B) have a thorough weekly examination of all diabetics; (C) use long hot foot soaks twice daily; (D) have diabetic patients report all foot injuries and infections to their physicians; (E) check the blood sugar level weekly in all diabetics.

5. In a patient whose basal metabolic rate is usually normal and who has the complaints of dyspnea, dysphagia, dysphonia, pain, tenderness and occasionally symptoms of hyperthyroidism, the most likely diagnosis is: (A) acute thyroiditis; (B) nodular goiter; (C) Riedel's struma; (D) carcinoma of the thyroid; (E) Hürthle cell tumor.

6. Head injuries occasionally are accompanied by: (A) hypochloremia and hyperchloruria; (B) hyperchloremia and hyperchloruria; (C) hyperchloremia and hypochlo-

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ruria; (D) hyperchloremia with normal urinary chlorides; (E) hypochloremia and hypochloruria.

7. In fractures through the middle of the shaft of the humerus, which one of the following structures is most likely to be injured? (A) ulnar nerve; (B) axillary nerve; (C) median nerve; (D) musculospiral nerve; (E) brachial artery.

8. Forceful vomiting in an infant, beginning between the second and fifth week in life, associated with visible peristaltic waves, is characteristic of: (A) Hirschsprung's disease; (B) Meckel's diverticulum; (C) volvulus; (D) congenital pyloric stenosis; (E) intussusception.

9. A patient 4 months pregnant has a serious cyst of the ovary measuring about 4 inches in diameter. Among the following changes, the one which is most likely to occur is: (A) torsion; (B) infection from an adherent bowel; (C) rupture; (D) malignant change; (E) development of a similar neoplasm in the other ovary.

10. The type of neck incision that is usually made in a laryngectomy

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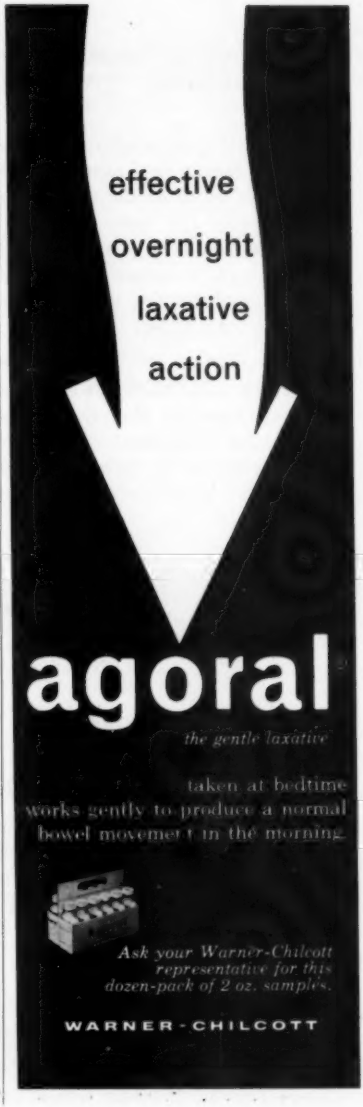
is a: (A) midline vertical incision from the cricoid to the third ring of the trachea; (B) horizontal incision 5 to 7 inches in length at the cricoid thyroid junction; (C) horizontal incision 5 to 7 inches in length at the level of the hyoid; (D) midline vertical incision from the hyoid to the suprasternal notch; (E) midline vertical incision from the hyoid to the thyroid notch.

11. A combination of unilateral pain and anesthesia in the face followed later by nerve deafness on the same side is highly suggestive of a tumor involving: (A) the geniculate ganglion; (B) Auerbach's ganglion; (C) the Gasserian ganglion; (D) the acoustic ganglion; (E) the trigeminal ganglion.

12. The most common site for tuberculous skeletal involvement in children is the: (A) clavicles; (B) humerus; (C) skull; (D) small bones of the extremities; (E) ribs.

13. Pyelograms in a patient who has a single cyst of the kidney may reveal a lesion simulating: (A) pyelonephritis; (B) carcinoma; (C) pyelitis; (D) polycystic kidney; (E) hydronephrosis.

14. Osler's nodes, small painful erythematous swellings of the skin of the hands and feet, are a sign of: (A) rheumatoid arthritis; (B) trichinosis; (C) subacute bacterial



endocarditis; (D) essential hyperlipemia; (E) gout.

15. In pontine hemorrhage the pupils are often: (A) unequal, with the larger pupil on the side of the brain lesion; (B) contracted to the size of pinpoints; (C) normal; (D) dilated; (E) unequal, with the larger pupil on the opposite side from the brain lesion.

16. Which one of the following types of brain waves is sharply reduced by opening of the eyes? (A) theta; (B) delta; (C) gamma; (D) alpha; (E) beta.

17. So-called "swimmer's itch" is caused by: (A) salt water; (B) infection with algae; (C) sting of jelly fish; (D) overexposure to sunlight; (E) schistosoma.

18. In herpes zoster the area of the body most commonly affected is the: (A) trunk; (B) fingers; (C) face; (D) legs; (E) arms.

19. In the serologic diagnosis of typhoid fever: (A) significant agglutination titers occur during the first week of the disease as a rule; (B) previous vaccinations with salmonella have little effect on the

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1. Shane, S. J., Krzyski, T. K., and Copp, S. E.: Canad. M.A.J. 77:600 (Sept. 15) 1957.

"H" agglutination titer; (C) the "O" agglutinin titer is more important than the "H" agglutinin titer; (D) "H" agglutinins are more important than either "O" or Vi; (E) "Vi" antigen must be included in the agglutination studies to establish the diagnosis.

20. An acute infectious disease which is characterized by a sudden onset, usually with a severe chill, and a rapidly rising temperature followed by a more or less general papular eruption is: (A) chicken pox; (B) measles; (C) smallpox; (D) scarlet fever; (E) herpes zoster.

21. An *erroneous* diagnosis of metastatic carcinoma of the prostate based on an elevation of the serum acid phosphatase may result from: (A) tumor metastatic to the prostate; (B) acute prostatitis; (C) benign prostatic hypertrophy; (D) prostatic massage; (E) therapeutic calcium administration.

22. A significant curve of the colloidal gold test performed on cerebrospinal fluid has been described for all of the following conditions *except:* (A) brain tumor; (B) primary syphilis; (C) multiple sclerosis; (D) general paresis; (E) syphilitic meningitis.

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What's the Doctor's Name?

by Victor R. Jablokow

He was born in London in 1779. His father died when he was but a few years of age and his mother moved with him to Edinburgh where he entered the university at the age of 14.

He received his M.D. degree when he was 19 and distinguished himself by valuable research work on consumption and the effects of nitrous oxide. Later he served as consulting physician to Queen Charlotte's Lying-In Hospital.

He was asked by the government to study the water supply of London and in 1828 published a report on the subject. He served as the first John Fuller professor of physiology at the Royal Institute, was secretary to the Royal Society of Physicians for 21 years and edited the "Proceedings" of the Royal Society.

His thirst for knowledge and passion for work led him into many

other fields, such as writing books on animal and plant physiology, on electricity, galvanism and phrenology and also contributing to encyclopedias.

He devised a slide rule, a balance, spent much time in attempting to perfect a calculating machine and showed remarkable ingenuity in devising and solving chess problems. He founded the Society for the Diffusion of Knowledge and wrote for it a series of popular manuals.

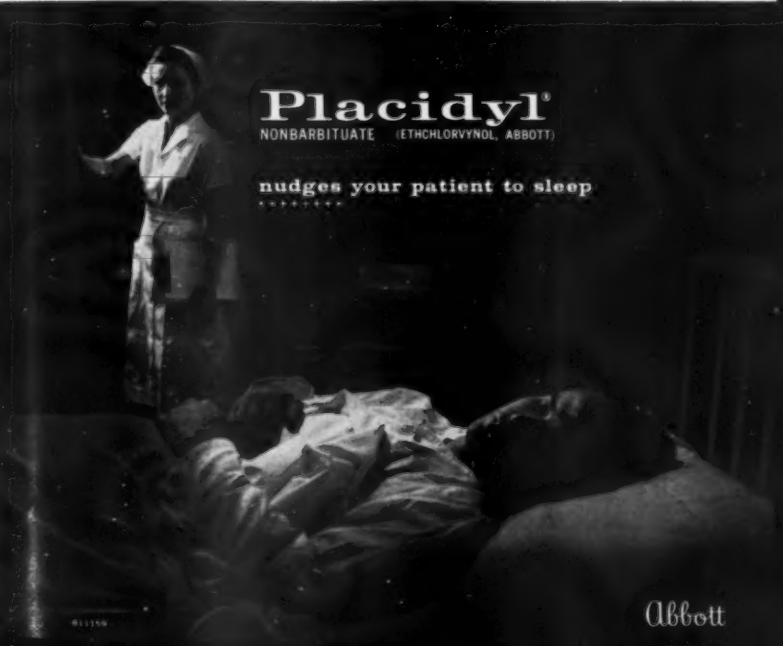
However, today he is best known for his monumental work under the title of *Treasures of English Words and Phrases, Classified and Arranged so as to Facilitate the Expression of Ideas and to Assist in Literary Composition.*

For this work he compiled synonyms, antonyms, idioms, metaphors, phrases, similies, colloquialisms, foreign expressions and quotations, all grouped according to ideas. He gathered material for almost 50 years before the dictionary was finally published in 1852.

One edition followed another, and at the age of 90 he was still collecting words and phrases for the 28th edition. After his death his son continued his work. He died in West Malvern, in September 1869.

Can you name this doctor?

Answer on page 229



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About Doctors

Conducted by SAUL A. KUCHINSKY

ALBERT SCHWEITZER. *Pierhal, Jean.* N. Y., Philosophical, '57. 160 p. $3.

Probably no man is more revered in the world today than the moral giant and universal genius who is the subject of this small but moving biography.

From his birth in 1875 in Alsace to his present active supervision of his hospital at Lambarene, French Equatorial Africa, the man has lived an incredible life. Just look at the record.

Schweitzer is a world authority on the music of Bach, one of the few great organists, one of the few great organ builders, theologian and philosopher, writer of a score of books, builder of a great hospital for tropical diseases, 1952 Nobel Peace Prize winner.

And we look, too, at the man behind the achievements. At 30 he is a professor and author, with a great academic and music career ahead of him. The world he moves in is shocked when he announces he will now go to medical school, become a doctor and open a missionary hospital in the jungles of Africa. Generals do not go into the front lines, his friends tell him. His answer is his creed, that " . . . the meaning

of my life does not consist in knowledge or art but simply in being human and doing some little thing in the spirit of Jesus."

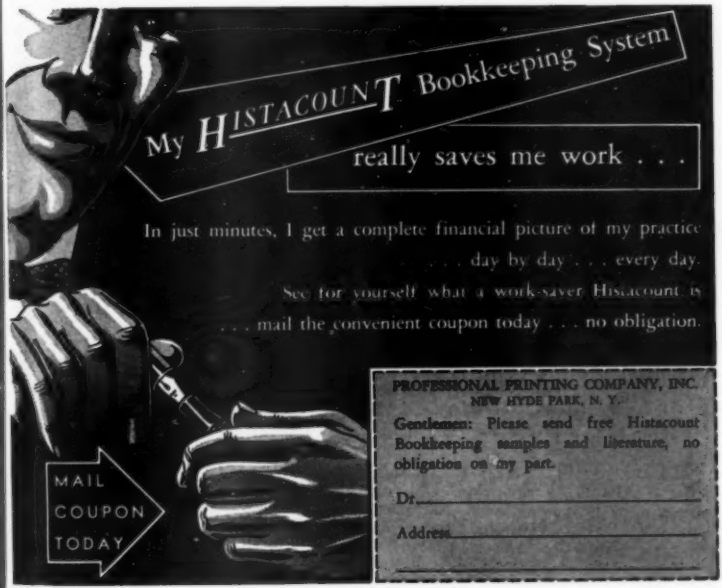
The "little thing"? It is to go to tropical Africa, an Africa of danger, disease, discomfort and primitive ignorance and there, himself doctor, painter, carpenter and plumber, to build one hospital and then a second, laboring like a Hercules to this very day.

The author has apparently had access to first sources. Much of the story is recreated through intimate personal anecdote.

For instance, a pet boar rolls in the mud and charges through the jungle chapel, lovingly befouling everyone's Sunday best. Schweitzer angrily gives it a boot that sends it flying, an action that conflicts with his humanitarian convictions. Reverence for life, we learn, is a motto and almost an obsession with him.

Schweitzer has made this peace with himself: Man is laden with guilt for his sins; he must commit as few of them as he can and forgive them in others.

It's a good book about a good man. Doctors can read and be proud of their colleague — proud that a Schweitzer is one of them.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VIEWBOX DIAGNOSIS

(from page 21)

Herniation of a Hollow Abdominal Viscus

Barium examination establishes that a portion of the colon is above the left diaphragm.

●

MEDIQUIZ ANSWERS

(from page 216)

1 (C), 2 (D), 3 (D), 4 (D), 5 (C), 6 (E), 7 (D), 8 (D), 9 (A), 10 (D), 11 (C), 12 (D), 13 (B), 14 (C), 15 (B), 16 (D), 17 (E), 18 (A), 19 (C), 20 (C), 21 (D), 22 (B).

●

WHAT'S THE DOCTOR'S NAME?

(answer from page 221)

The doctor is Peter Mark Roget.

●

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(puzzle on page 25)

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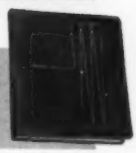

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Abbott Laboratories
(Compocillin-VK) 40, 41
(Placidyl) 221
Aeroplast Corp. (Vi-Drape Film) 39
Air Mass, Inc.
(Alternating Pressure Pad) .. 53
Aloe Co., A. S. (Office Equipment) 149
American Cyanamid Co.
(Owens Dressings) 173
(Surgaire, Topasil) 175
Ames Co., Inc. (Acetest) ....Cover 3
Ayerst Laboratories
(Beminal Forte) 36
(Premarin) 4, 6
(Premarin Intravenous) 185
Bauer & Black
(Bracer Supporter Belt) 16
(Curity Hospital Dressings) . 197
Baum Co., Inc., W. A.
(Baumanometer) 187
Becton, Dickinson Co.
(B.D. Products) 161
Birtcher Corp., The (ECG) ... 153
Blue Shield (Health Insurance) 27
Bristol-Myers Co. (Bufferin) ... 183
Burroughs Wellcome & Co., Inc.
(Lanoxin) 191
Carnation Co.
(Carnalac) 28
(Instant Milk) 193
Chicago Pharmacal Co. (Urised) 220
Ciba Pharmaceutical Products, Inc.
(Doriden) 3
(Pyribenzamine Lontabs) ... 195
(Serpasil) 56
(Tessalon) 218, 219
Colwell Co., The (Stationery) . 229
Department of the Army
(Residency Career) 159
Eaton Laboratories
(Furacin) 133
(Furoxone Liquid) 46, 47
General Electric Co.—X-Ray
Department (G. E. Patrician) 211
Lederle Laboratories, Division of
American Cyanamid Co.
(Achromycin V) 150, 151
(Diamox) 20
(Pathibamate) 32, 33
Lilly & Co., Eli (Ilotycin) 215
McNeil Laboratories, Inc.
(Butiserpine) 141
(Butisol Sodium) 37
(Parafon, Parafon with
Prednisolone) 49, 50, 51
Massengill Co., The S. E.
(Livitamin) ..between pages 34, 35
Mead Johnson & Co.
(Sustagen) .....Cover 4
Merck Sharp & Dohme, Division
of Merck & Co. Inc.
(Cathomycin) 26
(Cremomycin) 157
(Decadron) 163, 164, 165, 166
(Leritine) 216
(Mephyton) 44
(Sulfathalidine) 14
(Urecholine) 213
Mutual Benefit Life (Insurance) 45
Organon, Inc.
(Heparin, Liquaemin) 8
Ortho Pharmaceutical Corp.
(Delfen) 155
Parke, Davis & Co.
(Chloromycetin) 31
Physicians Casualty & Health
Associations (Insurance) 229
Professional Printing Co.
(Printing Needs) 223
Reed & Carnrick (Kwell) 43
Riker Laboratories (Rauwiloid) 189
Ritter Co., Inc.
(Universal Table) 169
Roche Laboratories, Division of
Hoffmann-La Roche Inc.
(Gantrisin) 58
(Romilar CF) 137, 139
Ross Laboratories (Similac) .. 209
Sanborn Co. (Visette ECG) 181
Schering Corp. (Meticorten) .. 55
Schmid, Inc., Julius (Ramses) 34, 201
Searle & Co., G. D. (Nilevar) .. 135
Smith Kline & French Laboratories
(Compazine) 57
(Dexamyl) 177
(Thorazine) 18, 19
Squibb & Sons, E. R. (Kenacort) 203
Travenol Laboratories, Inc.
(Vi-Cert C 1000) 205
U. S. Air Force
(Career Residency) 10
U.S. Army (Career Residency) 159
Upjohn Co. (Panalba) 170, 171
Veterans Administration
(Career Residency Program).. 218
Wallace Laboratories
(Meprospan) 24
Warner-Chilcott Laboratories
(Agoral) 217
(Anusol-HC) 29
(Gelusil) 225
(Mandelamine) 147
(Pyridium) 143
(Pyridium Tri-Sulfa) 145
(Tedral) .....Cover 2
White Laboratories, Inc.
(Gitaligin) 179
(Mol-Iron) 22, 23
Winthrop Laboratories
(Alevaire) 52
Wyeth Laboratories
(Cyclamycin) 114, 115
(Equanil) 199
(Pen•Vee K and L-A) 207
(Tubex) 35
(Zactirin) 12

166
216
41
14
213
45

8

155

31

229

223
43
189

169

58
139
209
181
55
, 201
135
es
57
177
3, 19
203

205

10
159
, 171

218

24

217
29
225
147
143
145
ver 2

179
2, 23

52

, 115
199
207
35
12